

**June 10, 1952**

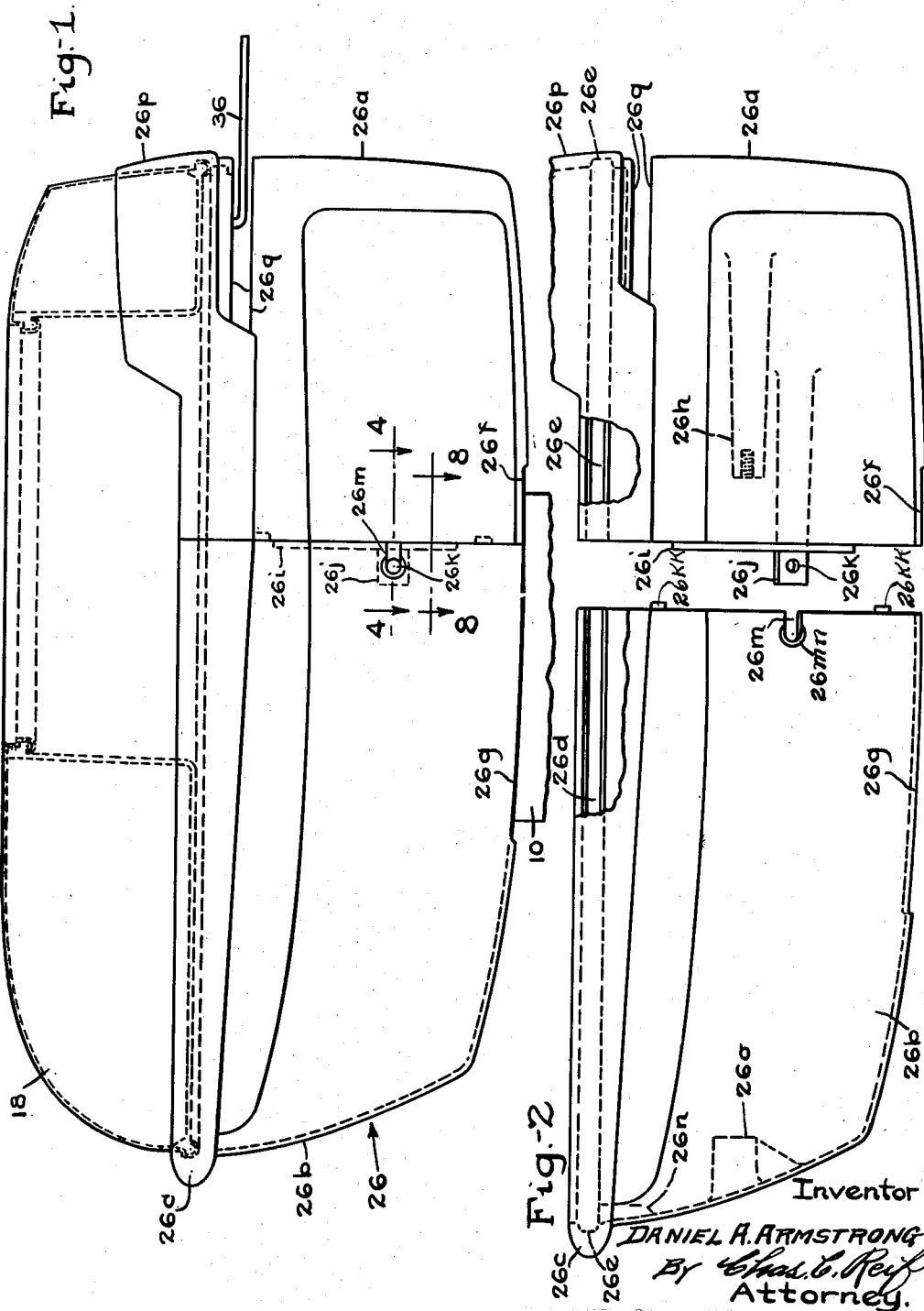
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**2,600,181**

OUTBOARD MOTOR WITH REMOVABLE COVER CASING

Filed April 5, 1948

3 Sheets-Sheet 1



June 10, 1952

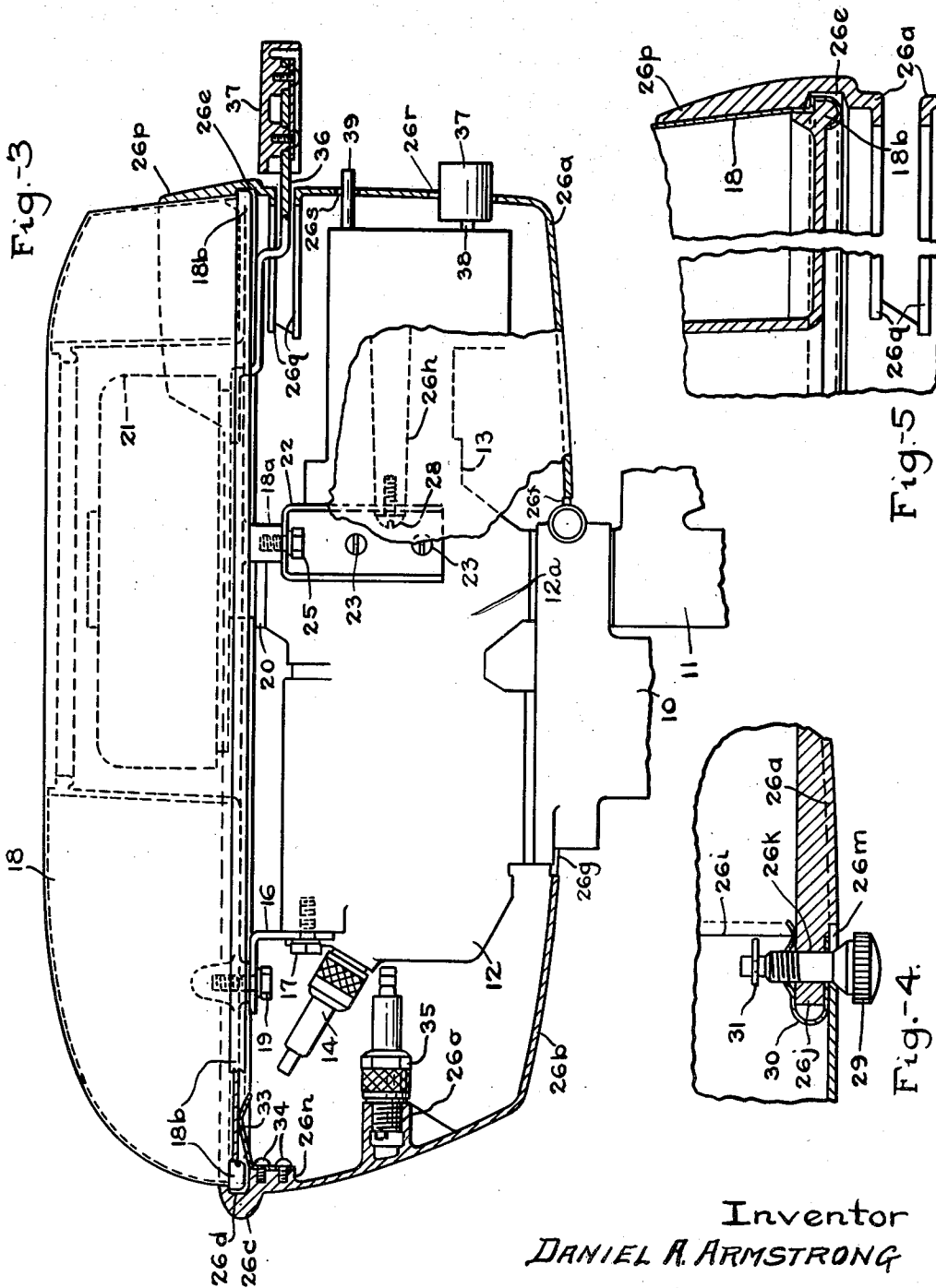
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Fig.-6

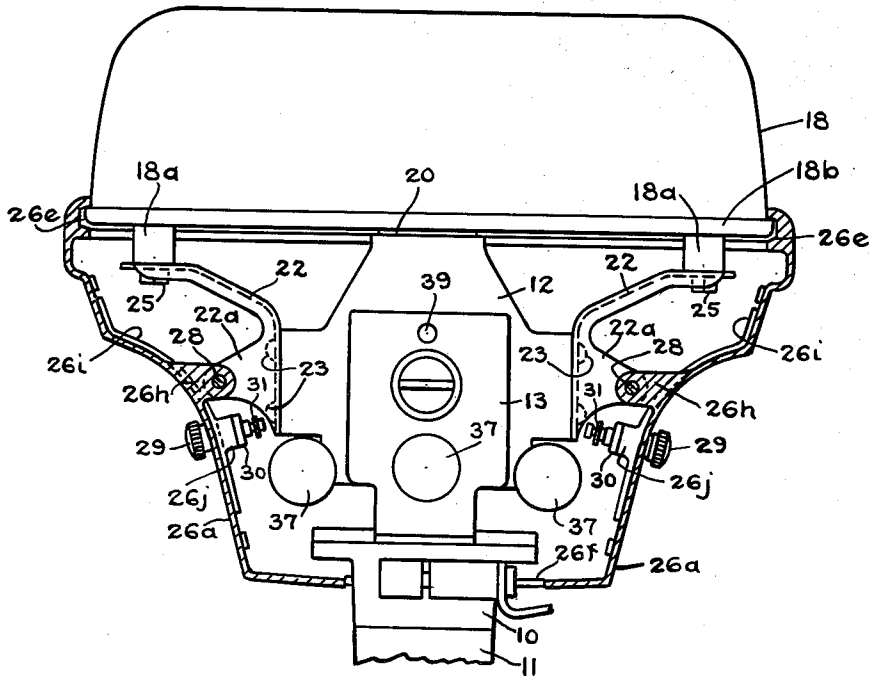


Fig.-7

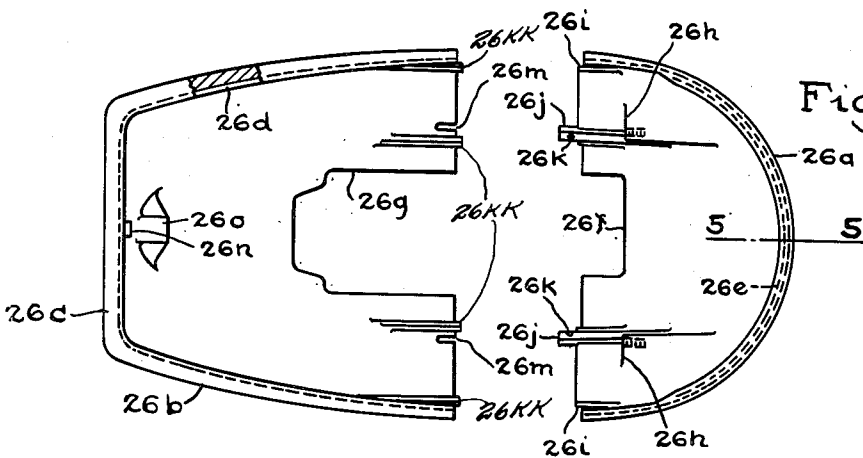
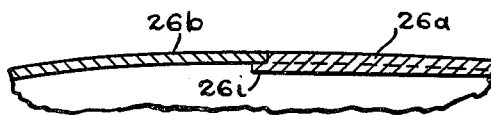


Fig.-8



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## UNITED STATES PATENT OFFICE

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OUTBOARD MOTOR WITH REMOVABLE  
COVER CASING

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10 Claims. (Cl. 123—198)

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This invention relates to an outboard motor construction and particularly to a structure comprising a cover casing extending about a cylinder block, crank case, carburetor and associated parts, hereinafter referred to as the power head, of said motor and supported by a gas tank at the upper end of said motor. It is now a common practice to have the gas tank of an outboard motor disposed at the top thereof. The cylinder block and crank case of the motor are disposed below this tank and usually have the carburetor of the motor secured thereto. The cylinder block, crank case, and carburetor, and particularly the latter, have small parts attached thereto including adjusting means for the carburetor. It is desirable from the standpoint of appearance and also from the viewpoint of protection for the parts to have a cover casing extending about the said power head.

It is an object of this invention to provide a simple and efficient structure in which a cover is provided comprising a casing having two sections each supported by the gas tank and respectively fitting about the ends of the gas tank and being slidably movable to position on the gas tank.

It is a further object of the invention to provide an outboard motor structure comprising a gas tank of elongated form in plan, the same having means extending about the sides thereof adjacent its bottom, a casing having an open upper end and having means extending about the inner side thereof adjacent its top adapted to inter-engage the said first mentioned means, said casing fitting about one end of said tank and being slidably movable on said first mentioned means to covering position.

It is also an object of the invention to provide such a structure as set forth in the preceding paragraph, together with a second casing open at its upper end and having means extending about the inner side thereof adjacent its top adapted to inter-engage with said first mentioned means to be supported thereby, said second casing fitting about the other end of said gas tank and being slidably movable to position thereon, together with means for holding said casings in position on said gas tank.

It is still another object of the invention to provide an outboard motor structure comprising a gas tank, said tank being of elongated form in plan and having a rib or bead extending about the sides thereof adjacent its bottom, a cover comprising a casing open at its upper end and having two sections divided along planes extending transversely of said tank, each of said sections

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having a groove extending about its inner side adjacent the top thereof and adapted to receive said rib or bead, said sections respectively fitting about the end portions of said tank and having their ends overlapping, and means for holding said sections in position on said tank, said sections extending about and enclosing said power head of said motor.

It is still further an object of the invention to provide a structure such as set forth in the preceding paragraph, together with means for preventing vibration of said cover or casing, one of said sections being provided with means for carrying a spare spark plug.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawings in which like reference characters refer to similar parts throughout the several views and in which:

Fig. 1 is a view in side elevation of a portion of an outboard motor showing the present invention;

Fig. 2 is a view in side elevation showing two sections of a cover casing in separated relation;

Fig. 3 is a view in side elevation of the upper portion of an outboard motor illustrating the invention, some parts being broken away and others shown in vertical section;

Fig. 4 is a horizontal section taken on line 4—4 of Fig. 1, as indicated by the arrows;

Fig. 5 is a vertical section taken on line 5—5 of Fig. 7;

Fig. 6 is a view partly in end elevation and partly in vertical section;

Fig. 7 is a top plan view of two casing sections used, some parts being shown in horizontal section; and

Fig. 8 is a horizontal section taken on line 8—8 of Fig. 1, as indicated by the arrows.

Referring to the drawings an outboard motor structure is shown comprising a frame portion 10 which is connected to the upper end of the drive-shaft housing 11. The cylinder block 12 and crank case 12a of the motor are secured to frame member 10 and the carburetor 13 is secured to the crank case 12a. A spark plug 14 is shown as supported in one end of the cylinder block 12. A bracket 16 is secured to cylinder block 12 by a headed bolt 17 and a gas tank 18 is supported by bracket 16 and secured thereto by a headed bolt 19. A flange 20 is secured to the top of the crank case 12a and has passing therethrough the crankshaft of the motor to which is secured the usual flywheel 21 shown in dotted lines in

Fig. 3. Brackets 22 are secured respectively to the sides of the crank case 12a (see Figs. 3 and 6) in any suitable manner, as by screws 23. Brackets 22 extend upwardly and outwardly from crank case 12a and engage the bottoms of and support lugs 18a extending downwardly from gas tank 18. Headed bolts 25 extend through brackets 22 into lugs 18a securing said lugs to said brackets. Gas tank 18 is thus supported by lugs 18a. As shown in Fig. 3 and indicated in Fig. 7, gas tank 18 is of elongated form in plan, one end thereof being substantially trapezoidal in plan and the other end being substantially semi-circular in plan. Tank 18 has an opening at the center thereof in which flywheel 21 is disposed.

In accordance with the present invention the gas tank 18 is provided adjacent its bottom with a rib or bead 18b which extends around the outer side of said tank. A cover casing 26 is provided, the same comprising a front section 26a and a rear section 26b. Section 26b has an enlargement in the form of a bead or rib 26c extending thereabout at its upper end and said section has at its inner side and within portion 26c and adjacent its top a groove 26d. Groove 26d is adapted to receive the rib or bead 18b. Sections 26a and 26b are open at their tops and section 26b, as shown in Fig. 7, is of trapezoidal form in plan and the same fits snugly about the rear end of gas tank 18. Said section 26b is slidable on the rib or bead 18b so that it can be slidably moved to position on tank 18. Section 26a has a groove 26e formed on its inner side adjacent its top, which groove is adapted to receive the rib or bead 18b. Section 26a fits snugly about the front side of tank 18 and is slidably movable on bead 18b to position on said tank. Casing 26, as shown in Figs. 3 and 6, extends downwardly below crank case 12a and has its bottom portion or bottom wall substantially fitting about frame member 19. The bottom walls of casings 26a and 26b have respectively openings 26f and 26g therein to accommodate frame 19. Front section 26a has lugs 26h extending from the sides thereof and when said section is in place fitting about tank 18, said lugs are in position adjacent portions 22a of brackets 22 and section 26a is then connected to brackets 22 by headed screws 23. Section 26a will be placed in position on tank 18 first and section 26b will then be moved to position on said tank. As shown in Figs. 4 and 8, section 26a at its inner end is recessed or rabbeted, as shown at 26i, and the inner end of section 26b overlaps the end of section 26a and has its end portion received in recess 26i. Lugs 26jk are formed on the inner sides of section 26b and have ends projecting beyond the inner end of said section and adapted to fit inside of section 26a. Section 26a has lugs 26j extending from the walls thereof beyond the inner end of said section and said lugs are provided with holes 26k. Section 26b has slots 26m in its side walls at its inner end, the same having countersinks 26mn at their inner ends. When sections 26a and 26b are in their inner positions on tank 18 and overlapping, a screw 29 having a knurled head is passed through slot 26m and through lug 26j, as shown in Fig. 4. Screw 29 is preferably provided with a so-called speed nut structure comprising a resilient plate or spring 30 disposed at either side of lug 26j and having a small semi-spherical portion at the inner side of said lug. The threads on screw 29 engage in an opening in said semi-spherical portion. The inner end of screw 29 is provided

with a groove for receiving an open pronged washer 31. The so-called speed nut structure is commonly used in the art and forms no part of the present invention. Screw 29 will be retained in the lug 26j and needs only to be loosened for the removal of section 26b. When 26b is moved to its inner position, screw 29 will be turned and tightened thereagainst to hold section 26b in place. Section 26b is thus connected to section 26a which in turn is held in position by screws 28. Section 26b has an inwardly projecting lug 26n at its upper portion and at its rear end to which lug is secured a plate spring 33 by headed screws 34. Spring 33 has an angular portion, the top of which engages the bottom of gas tank 18. Spring 33 acts to hold the top of groove 26d against the top of rib 18b to prevent any vibration or rattle of section 26b. Casing 26b also has in its inner side a lug 26c which is bored and tapped to receive a spare spark plug 35. Section 26a has at its front end an upwardly extending flange 26p which fits around the front end of gas tank 18. Plates or flanges 26q extend inwardly from the front of section 26a in vertically spaced relation and have an opening therebetween in the form of a slot through which extends a motor speed control lever 36 having thereon a handle 37. Handle 37 is secured by screws 40 and will be removed before section 26a is removed. The front of section 26a is also provided with openings 26r (see Figs. 3 and 6) through which extend knobs 37 secured respectively to adjusting rods or shafts 38 on carburetor 13. Casing 26a also has another opening 26s through which projects a small rod 39 connected to carburetor 13.

It will be seen that the casing 26 entirely encloses the cylinder block 12, crank case 12a, carburetor 13 and attached parts, so that said parts are nicely enclosed and protected from any blows or damaging contact with other objects. The enclosed parts are well protected from the weather. The sections 26a and 26b can be easily and quickly removed and are conveniently slidable to and from their positions on tank 18. Said tank and casing 26 are streamlined and formed to make one pleasing unit thus adding greatly to the appearance of the motor. The tank 18 and section 26 will be appropriately finished. Section 26b can be quickly removed by loosening screws 29 and the extra spark plug 35 if needed is readily accessible. Casing 26 thus not only encloses and protects exposed and small parts of the motor but adds greatly to the appearance thereof.

From the above description it will be seen that I have provided a very simple, desirable and efficient structure. The same is constructed to be quite durable and can be easily and quickly operated. The structure has been amply demonstrated in actual practice, found to be very successful and efficient and is being commercially made.

It will of course be understood that various changes may be made in the form, details, arrangement and proportions of the parts, without departing from the scope of applicant's invention, which generally stated, consists in a device capable of carrying out the objects above set forth, in the parts and combinations of parts disclosed and defined in the appended claims.

What is claimed is:

1. In an outboard motor structure comprising a cylinder block, a crank case connected thereto and a carburetor supported on said crank case, the combination, of a gas tank of elongated form

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in plan supported on said cylinder block, said tank having a bead extending about its sides adjacent its bottom, a cover member comprising a casing open at its upper side and having a groove in its inner side adjacent the top thereof adapted to receive said bead, said casing fitting about one end portion of said tank and being slidable on said bead longitudinally of said tank and enclosing said cylinder block, and means for holding said casing in position on said tank.

2. The structure set forth in claim 1, a second cover comprising a casing open at its upper side and having a groove in its inner side adjacent its top adapted to receive said bead, said casing fitting about the other end portion of said tank and enclosing said carburetor, said casings overlapping at their inner ends, and means for holding said second casing in position on said tank.

3. An outboard motor structure having in combination, a frame, a cylinder block and crank case secured to said frame, a gas tank supported on said crank case, said tank being of elongated form in plan having one end of substantially trapezoidal form and its other end of substantially circular form in plan, said tank having means extending about its side adjacent the bottom thereof for supporting a cover, a cover comprising a casing having means adjacent its top inter-engaging with said means to be supported thereby, and fitting about said tank, said casing comprising two sections each open at its upper side and having end portions disposed in planes extending substantially transversely of said tank, each section slidably engaging said first mentioned means and fitting about its respective end of said tank whereby each section can slide on said means and be removed from said tank by movement toward the ends thereof respectively, said sections enclosing said cylinder block and crank case, and means for holding said sections in position on said tank.

4. The structure set forth in claim 3, and a spring secured to one of said casings and engaging said gas tank to hold said means in engagement to prevent vibration or rattling of said sections.

5. An outboard motor structure having in combination, a frame, a cylinder block and crank case secured to the upper end of said frame, a bracket secured to said cylinder block at each side thereof, a gas tank supported by and above said cylinder block, said tank having a rib extending about the sides thereof adjacent its bottom, a casing open at its upper side and having a groove extending thereabout at the inner side thereof adapted to receive and fit said rib, said casing fitting about one end of said tank, a bracket secured to said crank case at each side thereof, said casing having a portion disposed adjacent said bracket, and means connecting said casing and bracket to hold said casing in position on said tank.

6. The structure set forth in claim 5, a second casing open at its upper side and having a groove extending about its inner side adjacent the top thereof adapted to receive and fit on said rib, said

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second casing fitting about the other end of said tank, said casings having their inner ends overlapping, and means engaging said first mentioned casing for holding said second casing in position on said tank.

7. The structure set forth in claim 5, a second casing open at its top and having a groove extending about its inner side adjacent the top thereof adapted to receive and fit on said rib, said second casing fitting about the other end of said tank, said casings having their inner ends overlapping, and a screw threaded into one of said casings, the other casing having an opening through which said screw passes, said screw having means engaging said last mentioned casing to hold the same in position on said tank.

8. An outboard motor structure having in combination, a frame, a power head secured to said frame, a gas tank supported by and above said power head, said tank being of elongated form in plan and having means extending about either side thereof adjacent its bottom for supporting a cover, a cover comprising a casing open at its top and having means extending about its inner side adapted to engage with said means for supporting said casing, said casing being slidable on said means.

9. The structure set forth in claim 8, said casing having a lug at one end at its inner side interiorly threaded to receive a spare spark plug.

10. In an outboard motor structure having a power head, a steering lever and a plurality of shafts at one end of said power head carrying carburetor adjusting means, the combination of a frame, a gas tank supported by and above said power head, said tank being of elongated form in plan and having means extending about either side thereof adjacent its bottom for supporting a cover, a cover comprising a casing open at its top and having means extending about its inner side adapted to engage with said means for supporting said casing, said casing fitting about one end portion of said tank, a second casing open at its upper side and having means adjacent its upper inner side adapted to engage with said first mentioned means and extending about and adapted to enclose a portion of said power head and carburetor, said second casing having openings for the passage of said steering lever and for the passage of said plurality of shafts.

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