

- [54] **COWL FOR OUTBOARD MOTOR**
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[73] Assignee: **Brunswick Corporation**, Skokie, Ill.
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- [52] U.S. Cl. **115/17, 123/195 P**
[51] Int. Cl. **B63h 21/26**
[58] Field of Search **115/12 R, 12 A, 17, 115/18 R, 18 A, 18 B, 18 E, 42; 180/69 R; 123/195 R, 195 P, 195 C, 198; 248/4**

- [56] **References Cited**
UNITED STATES PATENTS
2,676,559 4/1954 Davies 123/195 P
3,358,668 12/1967 Post et al. 115/17
3,610,198 10/1971 Alexadrowicz 115/17

Primary Examiner—Duane A. Reger
Assistant Examiner—Jesus D. Sotelo
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[57] **ABSTRACT**

A cowl for an outboard motor comprises two members having their rear portions hingedly connected to each by a common abutting member. Each of the hinges on the common abutting member has a tapered element extending therefrom for disposition in a cooperating tapered hole in a frame supported by the engine to provide support of the members on the engine. The front portions of the two members are spaced from each other to provide ready access to all adjustments of the engine by mere removal of a front shield, which closes the space between the two members. The front portions of the two members are releasably connected to each other by latches.

10 Claims, 11 Drawing Figures

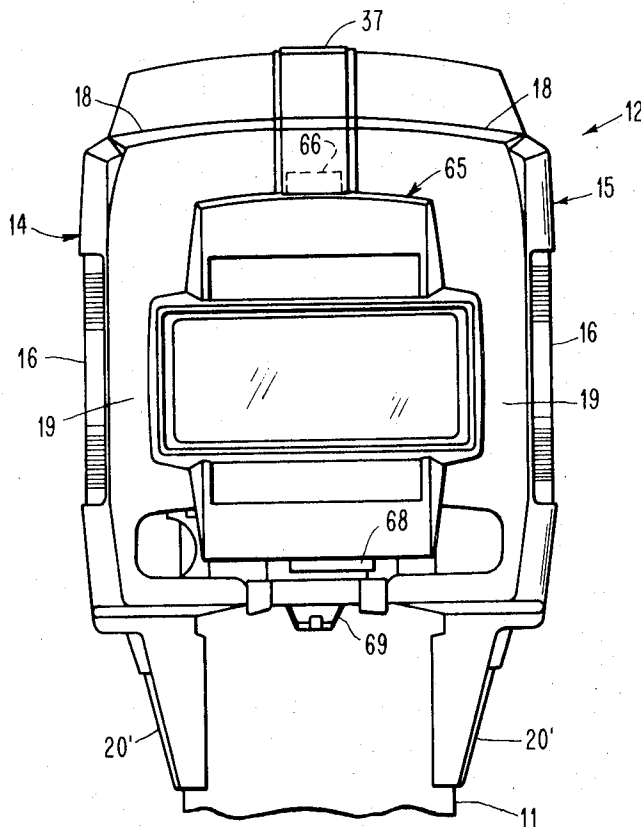


FIG. 1

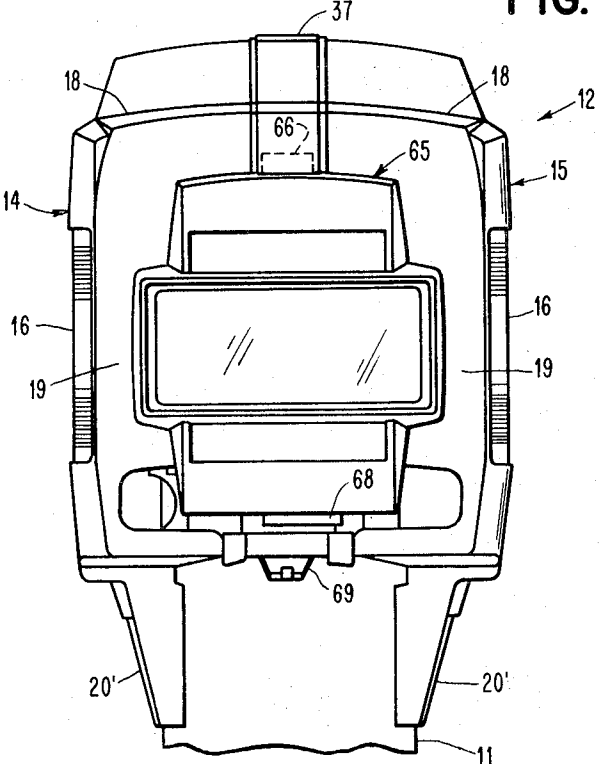
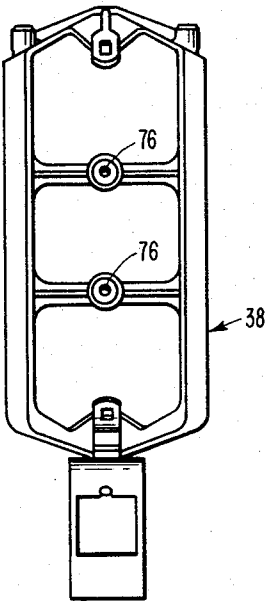


FIG. 6

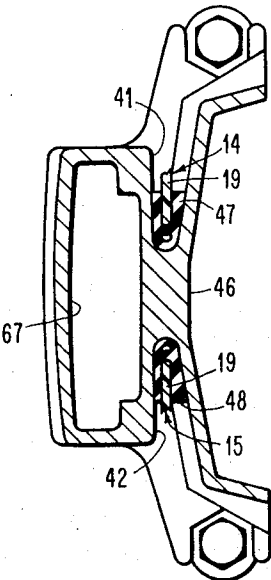


FIG. 8

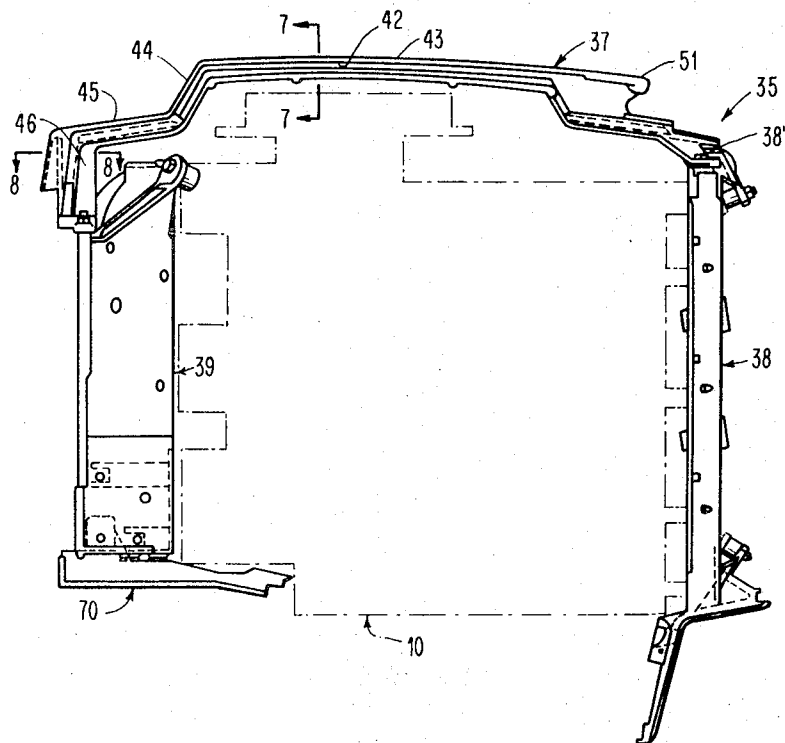


FIG. 2

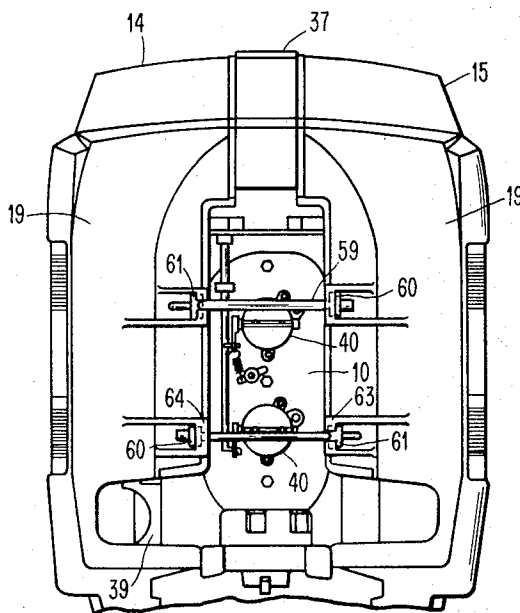


FIG. 3

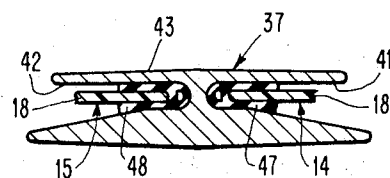


FIG. 7

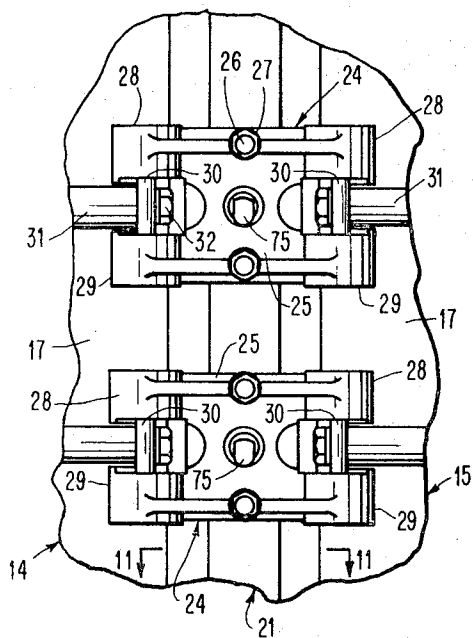


FIG. 4

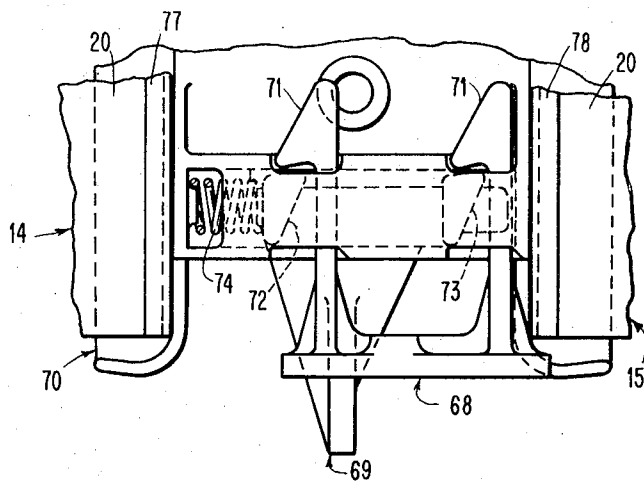


FIG. 9

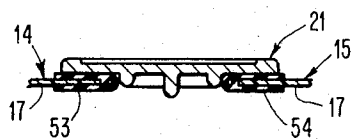
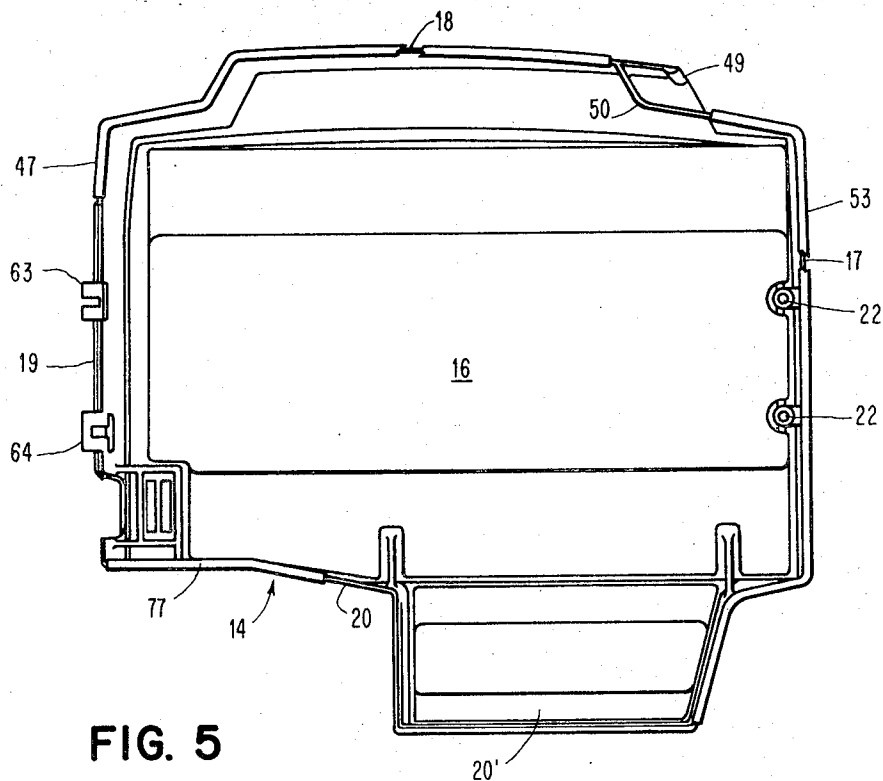
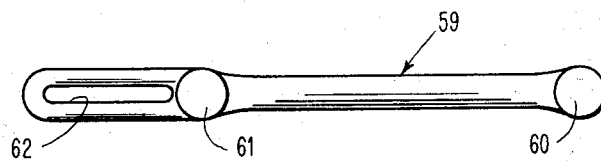


FIG. 11



COWL FOR OUTBOARD MOTOR

Cowls have been employed on outboard motors to protect the engine from the elements and the boat occupants from any contact with the engine. Various types of cowls have previously been employed.

However, the previously available cowls have been mounted on the engine so that access to a portion of the engine is blocked by a portion of the cowl after the readily removable portions of the cowl have been removed. Thus, the previously available cowls have necessitated further disassembly of the outboard motor beyond mere removal of the cowl for one to have access to any portion of the engine.

Additionally, the previously available cowls had to be partially removed to permit access to make adjustments to the carburetor. Thus, partial disassembly of the cowl has previously been necessary to make adjustments to adjustable elements such as the carburetor idle, which are located on the front of the engine.

The present invention satisfactorily overcomes the foregoing problems by providing a cowl which is formed so that all portions of the engine are accessible when the cowl is removed. There is no requirement for any further disassembly of the engine from the driveshaft housing as with the previously available cowls.

The unique configuration of the cowl of the present invention also enables one to be able to make adjustments to any of the adjustable elements on the front of the engine without having to remove the complete cowl. It is only necessary to remove a releasable front shield or cover.

An object of this invention is to provide an improved cowl for an outboard motor.

Another object of this invention is to provide a cowl for an outboard motor in which all the parts of the cowl can be quickly and easily removed.

Other objects of this invention will be readily perceived from the following description, claims, and drawings.

This invention relates to an outboard motor including a driveshaft housing, an engine supported on the driveshaft housing, and a cowl surrounding the engine. The cowl comprises a pair of members connected to each other adjacent their rear ends with their front ends spaced from each other and releasably connected by suitable means. The members are releasably supported on the engine by means to provide the sole support for the members directly on the engine.

This invention also relates to a cowl for surrounding an engine including first and second members surrounding portions of the engine and means to connect the rear ends of each of the first and second members to each other. The members are releasably supported on the engine by means. The members have their front ends spaced from each other to permit access to the front of the engine when the members are in surrounding relation to the engine with the spaced front ends of the members being releasably connected to each other by suitable means.

The attached drawings illustrate a preferred embodiment of the invention, in which:

FIG. 1 is a front elevational view of the cowl of the present invention;

FIG. 2 is a side elevational view of the frame of an outboard motor with which the cowl of the present invention is employed;

FIG. 3 is a front elevational view, similar to FIG. 1, but showing a front cover or shield removed;

FIG. 4 is a rear elevational view of a portion of the cowl as viewed from the inside of the cowl and showing the hinged relation of the members of the cowl to the rear bracket of the cowl;

FIG. 5 is a side elevational view of one of the two members of the cowl;

FIG. 6 is a rear elevational view of a rear frame of the support assembly for the cowl;

FIG. 7 is a sectional view taken along line 7—7 of FIG. 2 and showing the relation of portions of the members of the cowl to the top bracket of the support assembly for the cowl;

FIG. 8 is a sectional view taken along line 8—8 of FIG. 2 and showing the relation of portions of the members of the cowl to the top bracket of the support assembly for the cowl;

FIG. 9 is a top plan view of a front plate, its sealing relationship with portions of the members of the cowl, and the latching arrangement for the front shield or cover of the cowl;

FIG. 10 is an enlarged elevational view of a resilient element for securing the front portions of the members of the cowl to each other; and

FIG. 11 is a sectional view taken along line 11—11 of FIG. 4 and showing the relationship of the members and the rear bracket of the cowl to each other when the cowl is in its enclosing position.

Referring to the drawings and particularly FIG. 2, there is shown an engine 10 of an outboard motor with the engine 10 supported on a driveshaft housing 11 (see FIG. 1). As shown in FIG. 1, the engine 10 is enclosed by a cowl assembly 12.

The cowl assembly 12 includes a pair of members 14 and 15, which form a clam shell. As shown in FIG. 5 for the member 14 (the members 14 and 15 are mirror images), each of the members 14 and 15 includes a main side portion 16, a rear portion 17, a top portion 18, a front portion 19, a lower portion 20, and a depending side portion 20'. When the cowl assembly 12 is in its surrounding relation to the engine 10 as shown in FIG. 1, the rear portions 17 of the members 14 and 15 abut against opposite sides of a rear bracket 21 (see FIGS. 4 and 11).

The rear portions 17 are releasably connected to the rear bracket 21 by hinge means. The hinge means includes a pair of vertically spaced apertured ears 22 (see FIG. 5) on the member 14, a pair of vertically spaced apertured ears (not shown) on the member 15 but positioned the same as the ears 22 on the member 14, and a pair of vertically spaced hinge members 24 (see FIG. 4) on the rear bracket 21.

Each of the hinge members 24 includes a base 25, which is secured to the rear bracket 21 by bolts 26 and nuts 27. Each of the bases 25 has a pair of upper hollow loops 28 and a pair of lower hollow loops 29.

Each of the upper hollow loops 28 is vertically aligned with one of the lower hollow loops 29. A hinge pin 30 extends between the aligned hollow loops 28 and 29. Each of the hinge pins 30 has an opening therein to receive a bolt 31, which is passed through one of the apertured ears 22 on the member 14 or one of the apertured ears (not shown) on the member 15. Each of the bolts 31 has nut 32 cooperating therewith.

Accordingly, each of the members 14 and 15 can pivot about the vertical axes of the hinge pins 30 to

which they are connected by the bolts 31. This allows the members 14 and 15 to move from the position of FIG. 3 to a relatively open position in which the parts of the engine 10 are accessible and vice versa.

The cowl assembly 12 is mounted on a support assembly 35 (see FIG. 2), which is resiliently suspended on the engine 10 for support thereby. The support assembly 35 includes a top bracket 37, a rear frame 38, and an air induction box 39.

The rear frame 38 has its upper and lower portions resiliently mounted on the back of the engine 10 by resilient mountings such as those shown in U.S. Pat. No. 3,358,668 to Post et al., for example. The top bracket 37 is fixed to the upper end of the rear frame 38 at the rear of the top bracket 37 by screws 38'. The top bracket 37 has its forward end mounted on the air induction box 39, which is resiliently mounted on the engine 10 and directs air to carburetors 40 (see FIG. 3) of the engine 10. The resilient mounting of the top bracket 37 on the air induction box 39 is the same as the mounting of the upper and lower portions of the rear frame 38 on the engine 10.

The top bracket 37 has grooves 41 and 42 (see FIG. 7) on opposite sides thereof for cooperation with the top portion 18 of each of the members 14 and 15. The groove 41 receives the top portion 18 of the member 14 in a torque and groove arrangement, and the groove 42 receives the top portion 18 of the member 15 in a tongue and groove arrangement.

The top bracket 37 includes not only an upper straight portion 43 but also a first inclined front portion 44 extending from the forward end of the straight portion 43 and a second inclined front portion 45 extending from the forward end of the second inclined front portion 44. The grooves 41 and 42 extend along the entire length of the straight portion 43, the first inclined portion 44, and the second inclined portion 45 for cooperation with parts of the top portion 18 of each of the members 14 and 15.

The forward end of the second inclined portion 45 of the top bracket 37 has a downwardly depending portion 46. The portion 46 is mounted on the top of the air induction box 39.

The downwardly depending portion 46 of the top bracket 37 also has the grooves 41 and 42 (see FIG. 8) extending therealong to receive the upper part of the front portions 19 of the members 14 and 15. A seal 47 extends along the upper part of the front portion 19 of the member 14 and along the top portion 18 as shown in FIG. 5. A seal 48 (see FIGS. 7 and 8) similarly extends along the upper part of the front portion 19 of the member 15 and along the top portion 18 of the member 15. The seal 47 engages the portion of the top bracket 37 defining the groove 41 to form a seal therebetween while the seal 48 engages the portion of the top bracket 37 defining the groove 42 to form a seal therewith.

The top portion 18 of the member 14 is formed with an overhanging part 49, which begins adjacent the rear of the seal 47. The top portion 18 of the member 14 has a curved part 50, which is not sealed, extending beneath the overhanging part 49 as shown in FIG. 6. The member 15 has a similar arrangement of an overhanging part extending from the top portion 18 adjacent the end of the seal 48 and a curved part, which is not sealed, extending beneath the overhanging part. When the cowl assembly 12 is in its closed position, the overhanging part 49 of the member 14 and the overhanging

part of the member 15 are disposed beneath rear end 51 (see FIG. 2) of the upper straight portion 43 of the top bracket 37.

The rear portion 17 of the member 14 has seal 53 thereon and extending for the entire length of the rear portion 17 of the member 14 and along the rear part of the upper portion 18 that is rearward of the curved part 50 as shown in FIG. 5. The lower portion of the seal 53 extends along a short rear part of the lower portion 20 of the member 14 and along one edge of the depending side portion 20' of the member 14. The member 15 has a seal 54 (see FIG. 11) functioning in the same manner. The seals 53 and 54 bear against portions of the rear bracket 21 to form a seal therewith when the cowl assembly 12 is in its closed position.

When the cowl assembly 12 is in its closed position, air enters the cowl assembly 12 beneath the overhanging part 49 of the member 14 and the overhanging part of the member 15 and passes between the top bracket 37 and the unsealed curved part 50 of the top portion 18 of the member 14 and the unsealed curved part of the top portion 18 of the member 15. This air is then drawn into the carburetors 40 of the engine 10 through the air induction box 39.

When the cowl assembly 12 is in surrounding relation to the engine 10, the front portions 19 of the members 14 and 15 are spaced from each other as shown in FIG. 3. This space permits ready access to not only the carburetors 40 but also the various adjustments therefor such as the manual choke, the idle adjustment screws, and the main jet. Thus, even though the cowl assembly 12 is in its enclosing position, there is ready access to all the adjustment mechanisms for the carburetors 40.

As shown in FIG. 3, the front portions 19 of the members 14 and 15 are latched to each other by a pair of resilient elements 59. Each of the resilient elements 59 has a pair of spaced barrels 60 and 61 with an elongated slot 62 (see FIG. 10) adjacent the barrel 61.

Each of the members 14 and 15 has an open U-shaped element 63 and a closed U-shaped element 64 formed integral with the front portion 19. The member 14 has the open U-shaped element 63 above the closed U-shaped element 64 (see FIG. 5) while the arrangement on the member 15 is the reverse.

To secure the members 14 and 15 to each other, the resilient element 59 has the portion containing the elongated slot 62 and the barrel 61 passed through the opening in the closed U-shaped element 64 of one of the members 14 and 15 until the barrel 60 abuts against one surface of the closed U-shaped element 64. Then, the user places a finger in the elongated slot 62 to pull the resilient element 59 until the barrel 61 is disposed to bear against the surface of the open U-shaped element 63 of the other of the members 14 and 15 away from the closed U-shaped element 64 of the one of the members 14 and 15.

the cowl assembly 12 has a front shield or cover 65 (see FIG. 1) releasably supported thereon to substantially close the space between the front portions 19 of the members 14 and 15. This results in the engine 10 being substantially completely enclosed by the cowl assembly 12.

The front shield 65 has a tab 66 on its upper end for disposition withing a recess or receptacle 67 (see FIG. 8) in the front of the downwardly depending portion 46 of the top bracket 37. The bottom of the front shield or cover 65 has a hook assembly 68 attached thereto

for cooperation with a latch 69. The latch 69 is secured to a front plate 70, which is secured to the bottom of the air induction box 39 by screws.

The hook assembly 68 includes a pair of hooks 71 for cooperation with portions 72 and 73 of the latch 69. This relationship is shown in FIG. 9.

Accordingly, the front shield or cover 65 may be easily mounted on the cowl assembly 12 after the members 14 and 15 have had their front portions 19 latched to each other by the resilient elements 59. The front shield 65 is mounted on the cowl assembly 12 by inserting the tab 66 on the front shield 65 within the recess 67 in the portion 46 of the top bracket 37 and then inserting the hooks 71 of the hook assembly 68 so that they cooperate with the portions 72 and 73 of the latch 69 to latch the lower end of the front shield 65 to the engine 10.

The bases 25 of the hinge members 24 on the rear bracket 21 of the cowl assembly 12 has a pin 75 (see FIG. 4) extending therefrom at an angle for disposition within a tapered hole 76 (see FIG. 6) in the rear frame 38 of the support assembly 35. Accordingly, the direct initial support and alignment of the cowl assembly 12 on the engine 10 is by the pins 75 in the tapered holes 76.

Thus, the cowl assembly 12 may be easily disassembled through initially removing the front shield 65. This is accomplished by disconnecting the hook assembly 68 from the latch 69 and then moving the lower end of the front shield 65 away from the cowl assembly 12 so that the tab 66 may be removed from the recess 67 in the downwardly depending portion 46 of the top bracket 37.

Then, the resilient elements 59 are disconnected and the members 14 and 15 may be moved away from each other by pivoting about the axes of the hinge pins 30. It is then only necessary to remove the pins 75 from the tapered holes 76 in the rear frame 38 for the cowl assembly 12 to be completely removed.

When this occurs, complete access may be had to the engine 10 and the air induction box 39. Thus, there is no impediment by any portion of the cowl assembly 12 to reaching any element of the engine 10.

In addition to the seals 47 and 48 and the seals 53 and 54, the member 14 also has a seal 77 (see FIG. 5) extending along the front part of the lower portion 20 of the member 14. A similar seal 78 (see FIG. 9) extends along the front part of the lower portion 20 of the member 15. Since the lower portion 20 of each of the members 14 and 15 extends beneath the air induction box 39, the seals 77 and 78 engage surfaces of the front plate 70 to form a seal therebetween as shown in FIG. 9.

There is a part of the depending side portion 20' and of the lower portion 20 of each of the members 14 and 15 that does not have a seal. However, there are seals (not shown) on the engine 10 for cooperation with these parts of the members 14 and 15.

Since the front shield or cover 65 has a tight fit against the members 14 and 15, there is an effective enclosure of the engine 10 by the cowl assembly 12. The engine 10 is sealed from the atmosphere by the cowl assembly 12 except for the introduction of air into the cowl assembly 12 adjacent the overhanging part 49 of the member 14 and the overhanging part of member 15.

An advantage of this invention is that the cowl assembly permits easy accessibility to all carburetor adjustments through removal of the front shield or cover. Another advantage of this invention is that there is no interference by the cowl assembly to accessibility to any part of the engine when the cowl assembly is removed. A further advantage of this invention is that the cowl assembly may be more quickly removed than previously available cowl assemblies.

For purposes of exemplification, a particular embodiment of the invention has been shown and described according to the best present understanding thereof. However, it will be apparent that changes and modifications in the arrangement and construction of the parts thereof may be restored to without departing from the spirit and scope of the invention.

What is claimed is:

1. An outboard motor including a driveshaft housing, an engine supported on said driveshaft housing, a cowl surrounding said engine, said cowl comprising a pair of members connected to each other adjacent their rear ends, means to releasably support said members on said engine to provide the direct initial support of said members on said engine, said members having their front ends spaced from each other, and means to releasably connect the spaced front ends of said members to each other.

2. The outboard motor according to claim 1 in which said cowl includes a third member disposed between said pair of members, and hinge means to hingedly connected each of said pair of members to said third member.

3. The outboard motor according to claim 2 in which said releasably supporting means includes means connected to a portion of said hinge means on said third member.

4. The outboard motor according to claim 1 including means to substantially close the space between the spaced front ends of said members and means to releasably secure said closing means to said engine.

5. The outboard motor according to claim 1 in which each of said members includes a top portion overlying a portion of the top of said engine, a main side portion, a rear portion, a front portion, a lower portion, and a lower depending side portion, and said engine having means abutting each of the portions of said pair of members except the rear portion.

6. A cowl for surrounding an engine including first and second members surrounding portions of the engine, means to connect the rear ends of each of said first and second members to each other, means to releasably support said members on the engine, said members having their front ends spaced from each other to permit access to the front of the engine when said members are in surrounding relation to the engine, and means to releasably connect the spaced front ends of said members to each other.

7. The cowl according to claim 6 in which said connecting means includes a rear bracket and hinge means hingedly connecting each of said members to said rear bracket.

8. The cowl according to claim 7 in which said releasably support means includes means connected to the portions of said hinge means on said rear bracket.

9. The cowl according to claim 6 including means to substantially close the space between the spaced front

7

ends of said members and means to releasably secure said closing means to the engine.

10. The cowl according to claim 6 in which each of said members includes a top portion overlying a portion of the top of the engine, a main side portion, a rear

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portion, a front portion, a lower portion, and a lower depending side portion, and each of the portions of said members except the rear portions abutting against a portion of the engine.

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