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March 21, 1967 C. F. PERVIER 3,309,938

SINGLE LEVER REMOTE CONTROL FOR MARINE PROPULSION UNITS

Filed June 16, 1964 4 Sheets-Sheet 1

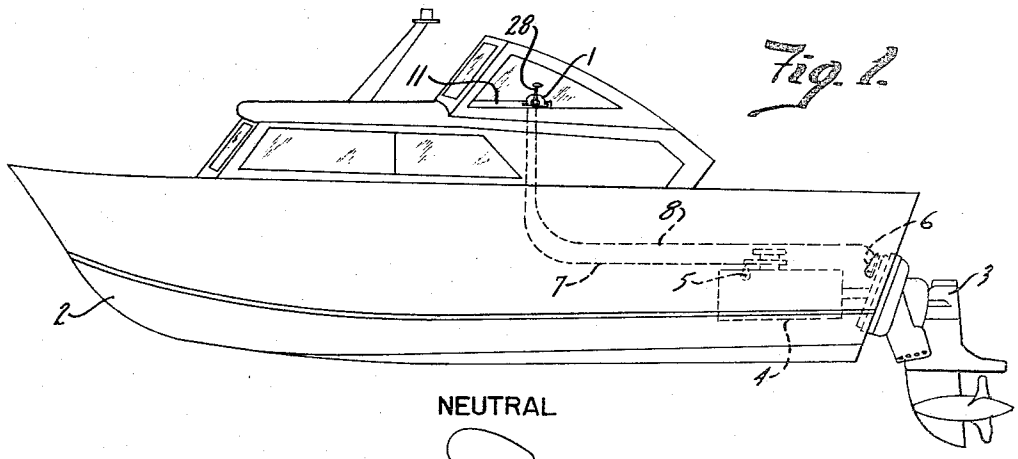


Fig. 1.

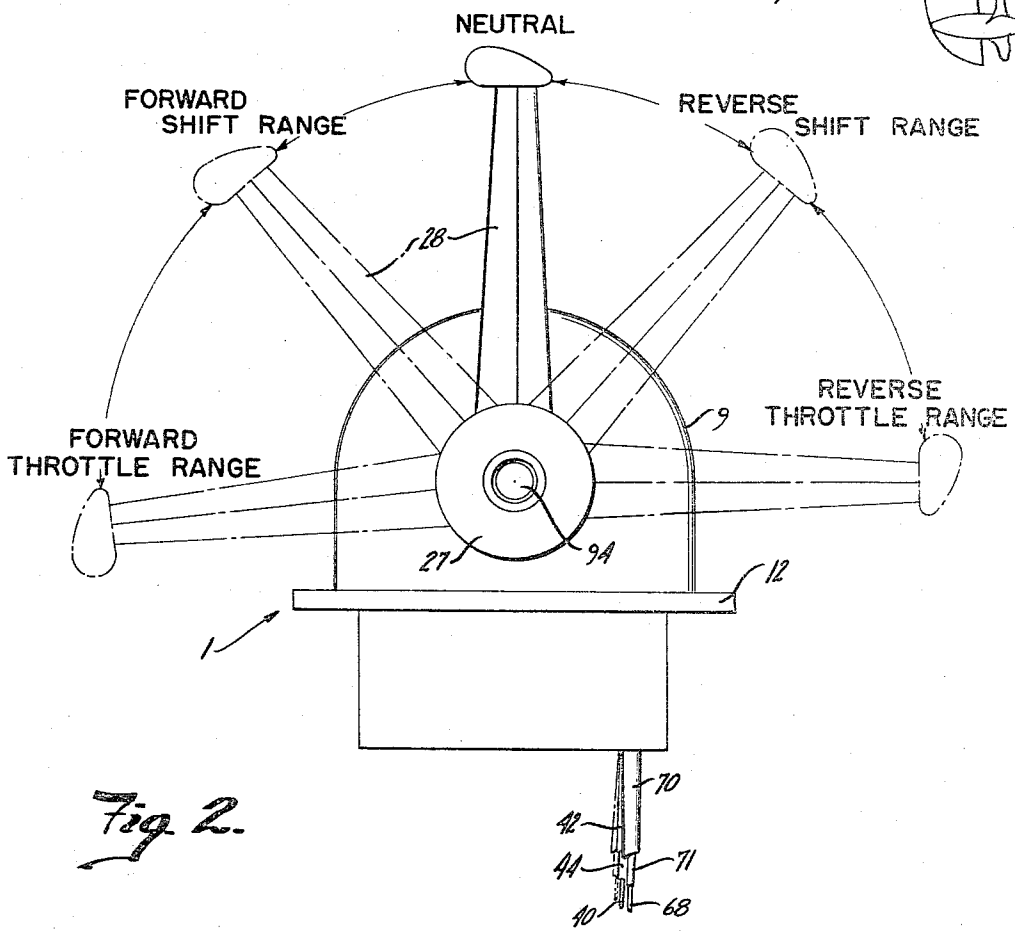


Fig. 2.

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March 21, 1967 C. F. PERVIER 3,309,938

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Filed June 16, 1964 4 Sheets-Sheet 2

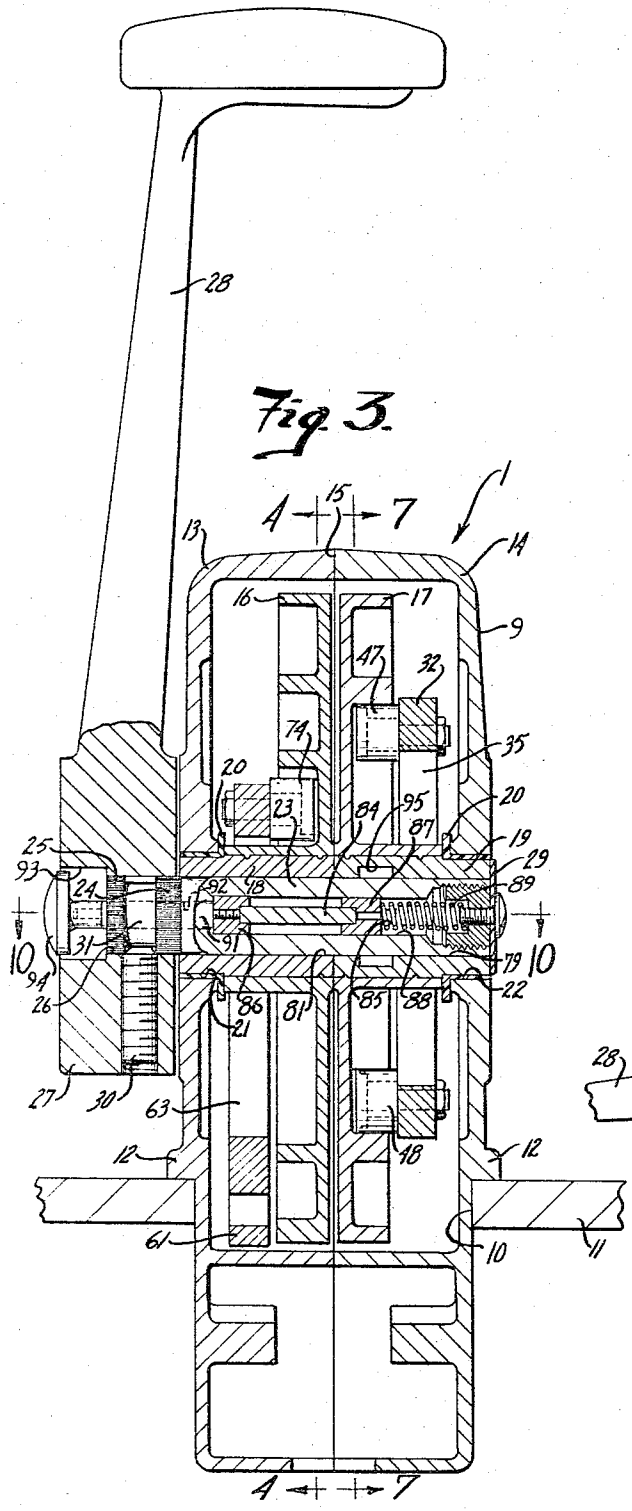


Fig. 3.

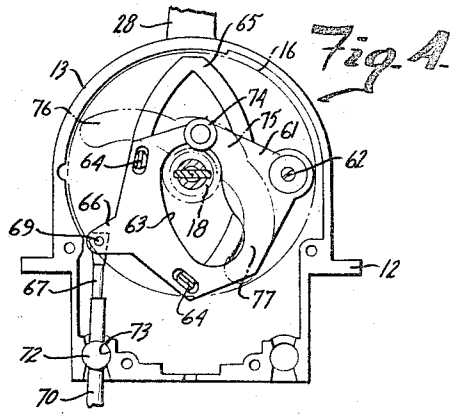


Fig. 4

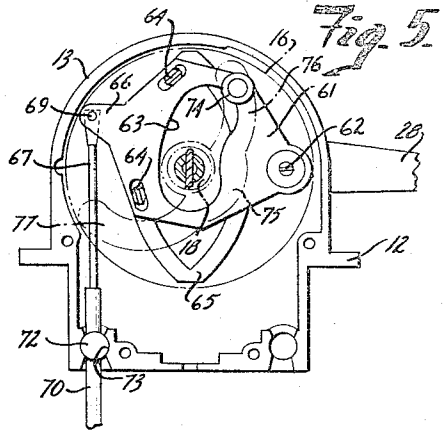


Fig. 5

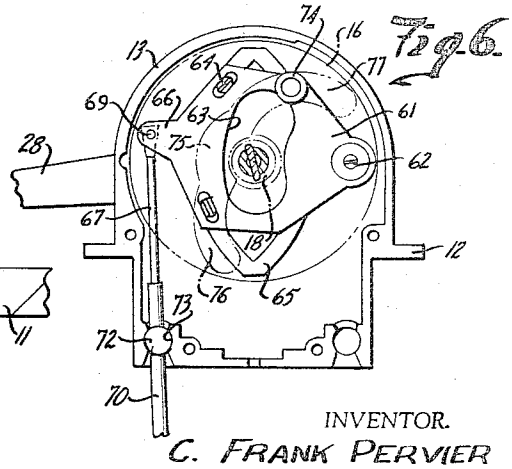


Fig. 6

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March 21, 1967 C. F. PERVIER 3,309,938

SINGLE LEVER REMOTE CONTROL FOR MARINE PROPULSION UNITS

Filed June 16, 1964 4 Sheets-Sheet 3

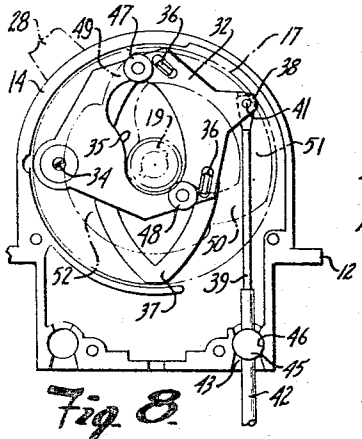


Fig. 8

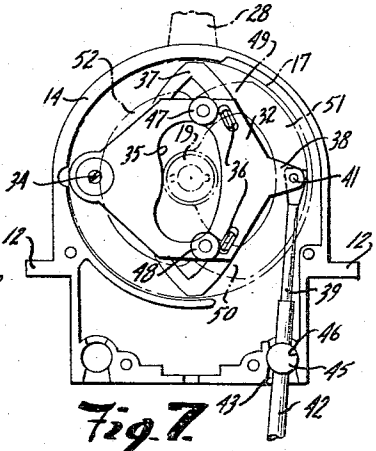


Fig. 7

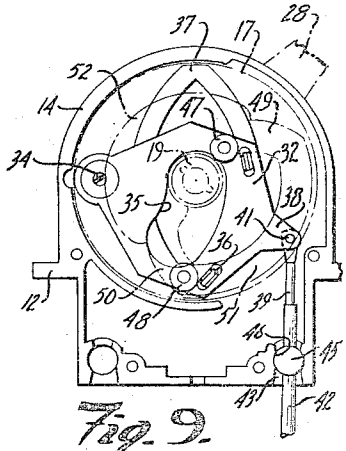


Fig. 9

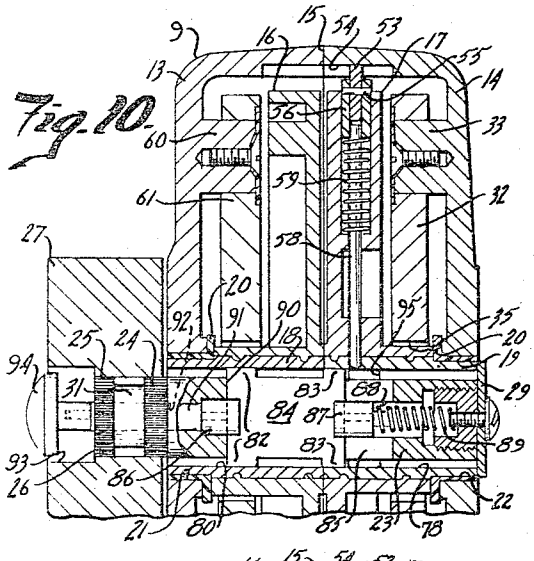


Fig. 10

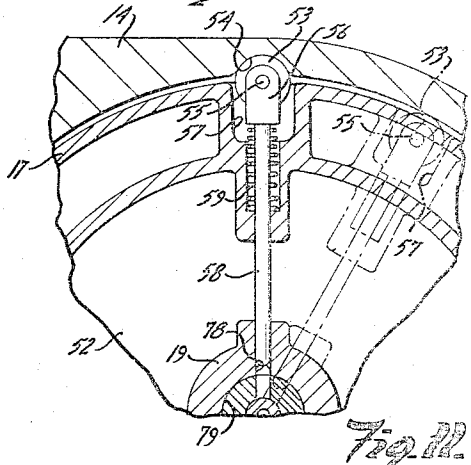


Fig. 11

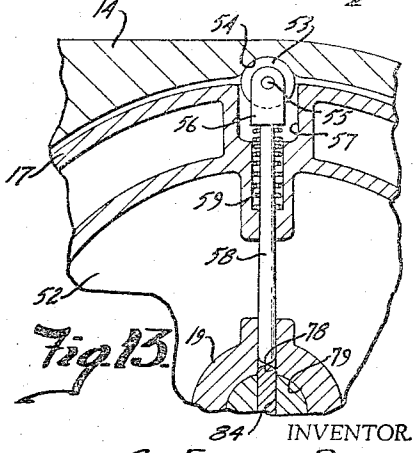


Fig. 13

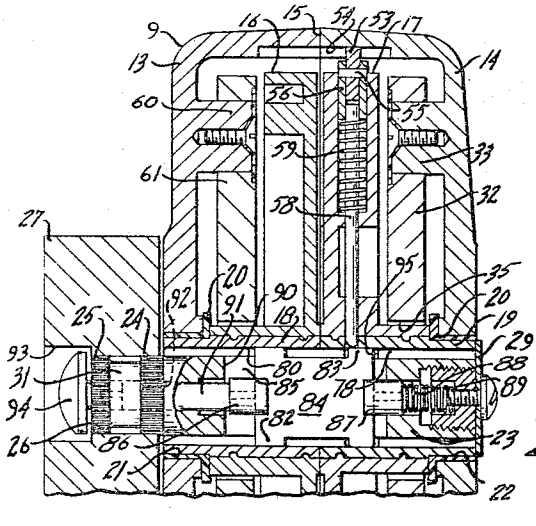


Fig. 12

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March 21, 1967 C. F. PERVIER 3,309,938

SINGLE LEVER REMOTE CONTROL FOR MARINE PROPULSION UNITS

Filed June 16, 1964 4 Sheets-Sheet 4

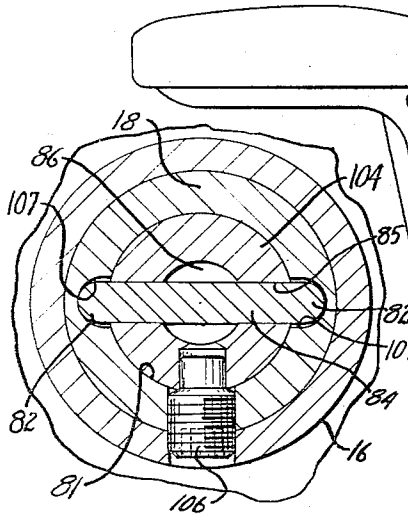


Fig. 17.

Fig. 16.

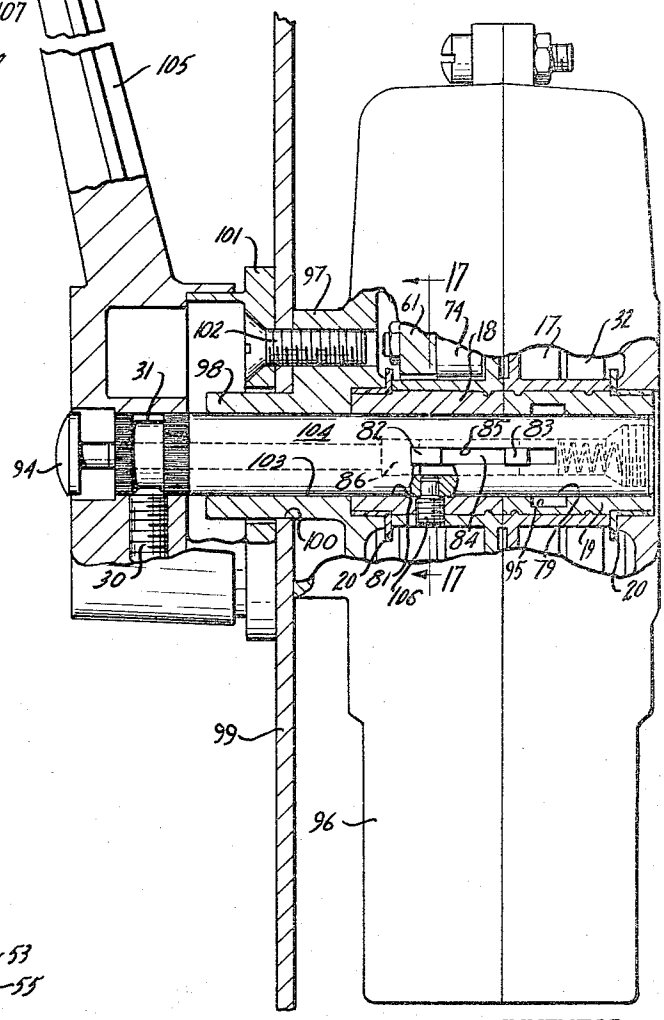
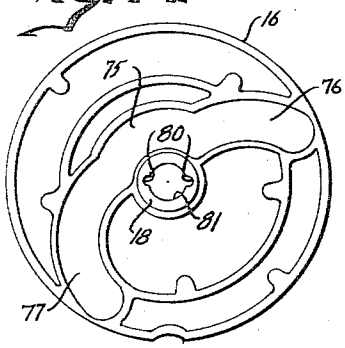


Fig. 14



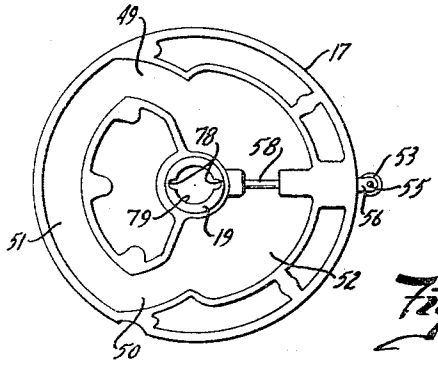


Fig. 15.

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3,309,938

SINGLE LEVER REMOTE CONTROL FOR MARINE PROPULSION UNITS

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Filed June 16, 1964, Ser. No. 375,504
16 Claims. (Cl. 74—472)

This invention relates to a single lever remote control for engine driven marine propulsion units.

Single lever remote controls for marine propulsion applications generally provide for shifting of reversing gears selectively by movement of the single lever through a shift range either forwardly or rearwardly from neutral into forward or reverse drive without materially advancing the engine throttle. After the selected gear is fully engaged, continued movement of the single lever in the selected direction controls the engine throttle as desired through a throttle range. Means are generally further provided in a single lever control for advancing the throttle in the neutral drive position for starting and warming up the engine. It is generally an object of this invention to provide an improved single lever remote control having the foregoing characteristics.

According to this invention, a single lever remote control for an engine driven marine propulsion unit having a throttle and a clutch or reversing gear shift means includes a housing and a lever actuated drive means rotatably mounted in the housing. The drive means has a neutral drive position and is selectively rotatable in either direction from neutral corresponding to forward and reverse drive positions respectively. A throttle control arm and a clutch or gear shift control arm are pivotally mounted within the housing and are operatively connected to the drive mechanism. The clutch or gear shift control arm is pivotally movable by the drive means through a shift range in either direction from neutral to forward and reverse drive positions selectively only during the first portion of rotation of the drive means in a corresponding direction. The throttle control arm remains substantially immobile during rotation of the drive means through the shift range and is thereafter movable in a given direction through a throttle range to advance the engine throttle. The single lever control unit further includes means operable only when the drive means is in the neutral drive position for rendering the drive means ineffective to drive the clutch or gear shift control arm, whereby operation of the single lever makes it possible to advance engine throttle for starting and warming up the engine.

The drawings furnished herewith illustrate the best mode of carrying out the invention as presently contemplated and set forth hereinafter.

In the drawings:

FIGURE 1 is a side elevation of a boat propelled by an inboard-outboard drive unit and generally shows the single lever remote control of this invention for operating the throttle and gear shift means of the unit;

FIG. 2 is an enlarged side elevation of the control with the main lever in the upright neutral position and in phantom lines shows the lever in other control positions;

FIG. 3 is an enlarged sectional view of the control in the neutral position taken generally on a vertical plane through the axis of the drive means;

FIG. 4 is a sectional view of the control taken generally on line 4—4 of FIG. 3 and showing the throttle control arm in the neutral position and in phantom lines shows the face cam for actuating the throttle control arm;

FIG. 5 is a view similar to that of FIG. 4 showing the throttle control arm in the forward throttle position and

in phantom lines shows the throttle control face cam in a corresponding position;

FIG. 6 is a view similar to that of FIG. 4 showing the throttle control arm in the reverse throttle position and in phantom lines shows the throttle control face cam in a corresponding position;

FIG. 7 is a sectional view of the control taken generally on line 7—7 of FIG. 3 and showing the gear shift control arm in the neutral position and in phantom lines shows the gear shift control face cam in a corresponding position;

FIG. 8 is a view similar to that of FIG. 7 showing the gear shift control arm in the forward drive position and in phantom lines shows the gear shift control face cam in a corresponding position;

FIG. 9 is a view similar to that of FIG. 7 showing the gear shift control arm in the reverse drive position and in phantom lines shows the gear shift control face cam in a corresponding position;

FIG. 10 is a partial sectional view taken generally on line 10—10 of FIG. 3 showing the throttle and gear shift face cams coupled together to drive the respective control arms;

FIG. 11 is a segmental view taken generally on line 11—11 of FIG. 10 and shows the gear shift face cam in neutral position with the detent interlock means in the unlocked position and in phantom shows the interlock means after the face cam is rotated away from its neutral position;

FIG. 12 is a view similar to that of FIG. 10 showing the gear shift face cam uncoupled from the throttle face cam so that the latter may drive the throttle control arm for throttle advance in neutral;

FIG. 13 is a segmental view taken generally on line 13—13 of FIG. 12 and shows the gear shift face cam locked to the control housing to permit throttle advance in neutral;

FIG. 14 is an elevational view of the throttle control face cam;

FIG. 15 is an elevational view of the gear shift control face cam;

FIG. 16 is an enlarged sectional view similar to that of FIG. 3 and shows another embodiment of the invention wherein the control unit is adapted for mounting on a vertical panel member; and

FIG. 17 is an enlarged view taken generally on line 17—17 of FIG. 16 with parts broken away and sectioned and shows the throttle face cam securement directly onto the drive member for rotation therewith.

Referring to the drawings, the single lever remote control 1 of this invention is shown mounted on the boat 2 in a position convenient to the operator for controlling the outboard drive unit 3 and its inboard engine 4. The control 1 is operatively connected to the throttle lever 5 of the engine 4 and the gear shift lever 6 of the drive unit 3 through corresponding push-pull cables 7 and 8.

According to the invention, the control 1 includes the housing 9 a portion of which is adapted to project downwardly through an opening 10 in a horizontally disposed panel 11 for mounting in the boat. The housing 9 is provided with a mounting flange 12 which seats on panel 11 and is bolted or otherwise secured thereto.

Housing 9 comprises opposed side wall portions 13 and 14 which are flanged to join on a central parting line 15 to form a generally closed housing. Side wall portions 13 and 14 correspond to what may be termed the throttle side and shift side respectively of the control.

The drive means for the control 1 includes a circular throttle face cam 16 and a circular shift face cam 17 which are disposed generally centrally of the housing side walls 13 and 14 and on opposite sides of the parting line 15. Cams 16 and 17 have their control faces turned outwardly

and respectively include stepped cylindrical hubs **18** and **19** which extend outwardly and are rotatably received in suitable bearings **20** disposed in the transversely aligned openings **21** and **22** in the housing side walls **13** and **14** respectively.

The hubs **18** and **19** of cams **16** and **17** respectively are mounted on the hollow drive member or shaft **23** which extends therethrough and projects from the throttle side **13** of housing **9**. The projecting end of the shaft **23** is provided with spaced portions **24** and **25** having longitudinally aligned spline grooves which are adapted to receive the complementary splines of bore portion **26** in the hub **27** of the single operating lever **28** to rotatably lock the lever onto the shaft. The shaft **23** is secured longitudinally between the washer **29** which overlays the end of hub **19** of the gear shift face cam **17** and the lever **28** which is secured onto the end of the shaft by the set screw **30** engaging in the aligned peripheral groove **31** disposed on the shaft between the splined portions **24** and **25**. The lever **28** as shown in FIGS. 2 and 3 is mounted on shaft **23** to extend generally upright in the neutral position of the drive means.

The gear shift face came **17** is adapted to drive the gear shift control arm **32** which is pivotally mounted on the stub shaft **33** extending inwardly from the wall **14** of housing **9** with the axis of the stub shaft being generally in the horizontal plane of the axis of shaft **23**. As viewed in FIGS. 7–9, the control arm **32** is pivoted about an axis at **34** shown to the left of shaft **23** and is pivotal in either direction from the generally horizontal neutral position. Intermediate its legth the arm **32** is provided with an arcuate laterally extending opening **35** to pass the hub **19** and provide for movement of the arm relative to shaft **23**. On the opposite side of shaft **23** from pivot **34** the control arm **32** carries a pair of circumferentially spaced anti-friction rollers **36** whose axes pass through the pivot **34** and which are adapted to roll on the track **37** radially spaced from pivot **34** and formed on the inner wall of housing portion **14**. The rollers **36** not only make it easier to operate the control, but also maintain the arm **32** in proper relation with respect to the wall **14** of the housing and the corresponding face cam **17**.

The outer end **38** of arm **32** is bifurcated and receives the end of a rigid push-pull rod **39** which is secured to and constitutes an extension of the core wire **40** of the gear shift cable **8**. A pin member **41** extends transversely through aligned openings in rod **39** and the control arm end **38** to pivotally secure the rod to the arm **32**. The rod **39** is telescopingly received within the rigid sleeve **42** which passes through the opening **43** in the bottom of housing **9**. The sleeve **42** represents an extension of casing **44** of cable **8** and extends through and is secured within the trunnion member **45** pivotally mounted in the socket **46** formed integrally with the housing adjacent to the housing opening **43**. The mounting of sleeve **42** is adapted to compensate for the arcuate motion of the control arm **32**, and the motion of the control arm selectively in either direction from neutral through the shift range is transmitted to the shift lever **6** on the drive unit **3** through actuation of the cable core **40**.

The gear shift control arm **32** also carries a pair of circumferentially spaced cam follower rollers **47** and **48** mounted on axes generally perpendicular to the arm and adapted to follow a track or recess provided in the corresponding face cam **17** for actuating the arm. The track or recess of face cam **17** includes a forward gear engagement portion **49** and a reverse gear engagement portion **50** which are generally arcuate and disposed symmetrically with respect to the horizontal plane containing the axis of shaft **23** when the cam is in its neutral position as shown in FIGS. 7 and 15. The outer ends of the cam recess portions **49** and **50** are connected by the circumferential retaining cam recess portion **51** while the inner ends of the recess portions **49** and **50** are connected by the relatively large irregularly shaped recess portion **52**.

In the neutral position of the shift control arm **32**, the cam follower rollers **47** and **48** are disposed within and adjacent to the inner ends of the corresponding face cam recess portions **49** and **50** as generally shown in FIG. 7. With selective rotation of the face cam **17**, one of the cam follower rollers is caused to traverse its coresponding gear engagement cam recess portion while the other of the rollers moves inwardly from its corresponding gear engagement cam recess portion and into the irregular recess portion **52**.

Upon moving the lever **28** forwardly for forward drive operation from the generally upright neutral position, the face cam **17** is rotated to cause the forward cam roller **47** to traverse the forward cam recess **49** while roller **48** enters cam recess **52**. Through the forward shift range of lever **28** indicated generally in FIG. 2, the roller **47** moves relative to the face cam **17** to the juncture of recesses **49** and **51** as shown generally in FIG. 8. When the roller **47** reaches the juncture of recesses **49** and **51**, the control arm **32** will have pivoted to its maximum forward drive position and through its corresponding push-pull cable **8** will have moved the shift lever on the drive unit **3** to the position of complete forward gear engagement. Upon continued forward rotation of lever **28** through the forward throttle range as will be explained more fully hereinafter, the roller **47** enters and traverses the circumferential cam recess **51** as the face cam **17** continues its rotation with shaft **23** and thereby retains the control arm **32** in the forward drive position. Cam roller **48** in the meantime traverses within recess **52**. With return movement of lever **28** to the neutral position, cam roller **47** retraces its path to return the control arm **32** to its neutral position and effect gear disengagement within the drive unit **3**.

For reverse drive operation, the cam roller **48** traverses the cam recess **50** and the cam roller **47** enters recess **52** as the face cam **17** is rotated by the lever **28** moving rearwardly from the generally upright neutral position. Through the reverse shift range of lever **28**, the roller **48** moves to the juncture of cam recesses **50** and **51** as shown generally in FIG. 9. When roller **48** has reached the juncture of cam recesses **50** and **51**, the control arm **32** will have pivoted to its maximum reverse drive position and have effected a complete reverse gear engagement. Thereafter and with further rearward movement of control lever **28** through the reverse throttle range, the cam roller **48** enters and traverses the circumferential recess **51** as the face cam **17** continues its rotation and thereby retains the control arm **32** in the reverse drive position. Cam roller **47** in the meantime traverses within recess **52**. Cam roller **48** retraces its path to return the control arm **32** to its neutral drive position and effect gear disengagement as the control lever **28** is returned to its generally upright neutral position.

The neutral position of the control **1** is not only evident by the generally upright position of control lever **28**, but also is discernible by feel as a small roller **53** carried at the periphery of face cam **17** enters the detent notch **54** provided in the housing wall generally in the horizontal plane containing the axis of shaft **23**. The roller **53** is rotatably mounted on traversely extending pin means **55** carried by the yoke member **56** which along with roller **53** is depressible within a radially extending housing **57** on face cam **17** when the face cam is rotated from its neutral position. Yoke member **56** is carried on the end of a radially extending pin member **58** which projects from the end of housing **57** oppositely from the roller **53** and extends on through cam recess **52** and into the hub **19** of the shift face cam **17** for a purpose to be explained hereinafter. The spring **59** is disposed within housing **57** around pin member **58** and biases the yoke member **56** and roller **53** outwardly to maintain the roller in engagement with the adjacent housing wall.

The wall **13** of housing **9** is provided with a stub shaft **60** generally transversely and axially aligned with stub

shaft 33 on wall 14. A throttle control arm 61 is rotatably mounted on the stub shaft 60 and is adapted to be driven by the throttle control face cam 16. As shown in FIGS. 4–6, the control arm 61 is pivoted about an axis at 62 and moves in a given direction to open or advance the engine throttle.

Intermediate its length the arm 61 is provided with an arcuate laterally extending opening 63 to pass the hub 18 of face cam 16 and provide for movement of the arm relative to shaft 23. The throttle control arm 61 carries a pair of circumferentially spaced anti-friction rollers 64 on the opposite side of shaft 23 from pivot axis 62 and whose axes pass through the pivot 62 and which are adapted to roll on the track 65 spaced radially from pivot 62 and formed integrally on the inner housing wall 13.

The outer end 66 of arm 61 is bifurcated and receives the free end of a rigid push-pull rod 67 which is secured to and constitutes an extension of the core 68 of the throttle cable 7. The rod 67 is pivotally secured to the arm 61 by means of pin member 69 which extends transversely through aligned openings in the rod and the control arm end 66. A rigid sleeve 70 telescopingly receives the rod 67 and passes through the opening 43 in the bottom of the housing 9. The sleeve 70 represents an extension of casing 71 of cable 7 and extends through and is secured within the trunnion member 72 pivotally mounted in the socket 73 formed integrally with the housing adjacent to the opening 43 and providing for pivotal movement of the sleeve relative to the housing in compensation for the arcuate motion of the throttle control arm 61.

The throttle control arm 61 is further provided with a cam follower roller 74 which is rotatably mounted on a generally transverse axis and is engageable within a track or recess in the adjacent throttle control face cam 16. The recess in the throttle control face cam 16 is generally divided into three portions, an intermediate neutral or idle portion 75, a forward drive portion 76 and a reverse drive portion 77. The intermediate neutral or idle recess portion 75 is generally circular and disposed coaxially with respect to shaft 23. With cam roller 74 disposed in neutral recess portion 75, the outer end 66 of arm 61 is in the lowermost or idle position as generally shown in FIG. 4. The length of neutral or idle recess portion 75 corresponds generally to the shift range of the control in both directions so that gear engagement of the drive unit 3 may be completed in either direction while at idle throttle setting.

In operation and when lever 28 is moved forwardly for forward drive operation of drive unit 3, the throttle face cam 16 first moves through the forward shift range with the cam follower roller 74 moving within the neutral or idle recess portion 75 of the face cam to maintain the throttle arm 61 and engine throttle lever 5 in their respective idle positions while the forward gear is being engaged. After cam follower roller 74 reaches the juncture of face cam recess portions 75 and 76 and the forward gear is fully engaged, continued rotation of lever 28 carries the throttle face cam 16 into the forward throttle range and cam follower roller 74 enters the arcuate forward drive recess portion 76. As the face cam 16 is rotated through all or any portion of the forward throttle range, the follower roller 74 moves outwardly in recess portion 76 to thereby pivot the throttle control arm 61 moving the outer end 66 of the arm upwardly as generally shown in FIG. 5 to pivot the engine throttle lever 5 and advance the engine throttle correspondingly. With rearward movement of the single lever 28 through the forward throttle range, follower roller 74 moves inwardly to the juncture of recess portions 76 and 75 to return the control arm 61 and engine throttle lever 5 to their respective idle positions. As the lever 28 continues rearwardly through the forward shift range to its upright neutral position, the throttle control arm 61 remains in the lower idle position while the roller 74 is caused to traverse to a location generally midway in recess portion 75.

For reverse drive operation of drive unit 3, the single lever 28 is moved rearwardly from its generally upright neutral position and carries the face cam 16 first through the reverse shift range. Through the reverse shift range, cam follower roller 74 moves within or relative to the neutral or idle recess portion 75 of the face cam 16 to the juncture with recess portion 77 and thereby maintains the throttle arm 61 and engine throttle lever 5 in their respective idle positions while the reverse gear is being engaged. After the cam follower roller 74 reaches the juncture of recess portions 75 and 77 and the reverse gear is fully engaged, roller 74 enters the arcuate reverse drive recess portion 77 with continued rearward rotation of face cam 16 into the reverse throttle range by lever 28. As the face cam 16 is rotated through all or any portion of the reverse throttle range, the cam roller 74 moves outwardly in cam recess portion 77 and thereby pivots the throttle control arm 61 upwardly as generally shown in FIG. 6 to pivot the engine throttle lever 5 and advance the engine throttle in reverse correspondingly. To return the open engine throttle to the idle position, rotation of lever 28 and face cam 16 is reversed and the roller 74 thereby moves inwardly to the juncture of cam recess portions 75 and 77 returning the control arm 61 to the idle position. Arm 61 will remain in the idle position, as the reverse gear is disengaged and the single lever 28 is returned to the neutral generally upright position.

For starting and warmup it is generally desirable in a control for a marine drive to provide means for advancing engine throttle in the neutral drive position. Such means are provided in the control 1 of this invention and are generally shown in FIGS. 10–13.

The hub 19 of the shift face cam 17 is provided with diametrically opposed axially extending recesses 78 which project outwardly from the bore 79 in the radial plane of the pin member 58. The throttle face cam 16 is similarly provided with diametrically opposed axially extending recesses 80 outwardly from the bore 81. When the drive means of control 1 is in the neutral position with the lever 28 generally upright, the recesses 78 and 80 are generally aligned and are adapted to slidably accommodate the diametrically opposed teeth 82 and 83 provided on opposite ends of the movable coupling element 84 disposed in the elongated slot 85 in drive shaft 23.

Coupling element 84 is disposed between a pair of cylindrical carrier elements 86 and 87 which slide within the bore 88 of shaft 23. A spring 89 is also disposed in the shaft bore 88 in abutting relation with carrier element 87 and normally biases the coupling element 84 against the shoulder 90 at the opposite end of slot 85 in shaft 23. With the coupling element 84 biased against shoulder 90, the coupling element is in driving relation with both the throttle face cam 16 and shift face cam 17 as generally shown in FIG. 10 and provides for shift and throttle actuation in proper sequence by rotation of the respective face cams as hereinbefore described.

The carrier element 86 for the coupling element 84 is secured on the end of the pin member 91 slidably disposed in the reduced bore portion 92 of shaft 23. The pin member 91 projects from the end of shaft 23 into the enlarged bore recess 93 in the hub 27 of the single lever 28 and carries a push button 94 on the end thereof.

The push button 94 is manually depressible to slidably move the coupling element 84 against the bias of spring 89 to place the teeth 83 on the coupling element in alignment with the circumferential groove 95 which intersects with and is of similar depth as opposed recesses 78 in the shift face cam 17.

To advance the engine throttle in the neutral drive position, the button 94 is first depressed to place the teeth 83 of the coupling element 84 in alignment with the circumferential groove 95 in the shift face cam 17. Thereafter, with rotation of the single lever 28 in either direction from its generally upright position, the throttle face cam 16 will rotate with the coupling element 84 to advance

the engine throttle lever **5** while the teeth **83** of the coupling element ineffectually rotate within the groove **95** of the shift face cam **17** which is held in the neutral position by engagement of the detent roller **53** within the detent notch **54**. Once rotation of the coupling element **84** is started to advance throttle in neutral drive, button **94** may be released as the groove **95** will hold the coupling element against return. When the lever **28** is returned to its generally upright position and the teeth **83** of coupling element **84** align once again with opposed recesses **78** of the shift face cam **17**, the spring **89** will return the coupling element to the position generally shown in FIG. 10 wherein the element is again in driving relation with both the throttle face cam **16** and the shift face cam **17**.

The coupling element **84** may be shifted only when the drive means for the control **1** is in the neutral drive position as is most clearly shown in FIG. 11. As there shown, the blocking pin **58** extends generally to the depth of recess **78** and groove **95** in the neutral position of the shift face cam **17** when the detent roller **53** is seated in the notch **54**. Once the shift face cam is rotated to unseat the roller **53** from notch **54** as shown in phantom lines in FIG. 11, the blocking pin **58** is displaced inwardly into the recess **78** and thus would block movement of the coupling element **84** out of driving relation with the shift face cam **17**.

As most clearly shown in FIG. 13, if throttle advance in neutral drive is desired but the button **94** is not adequately depressed, a surprise shifting of gears is rendered impossible because the teeth **83** on coupling element **84** will block inward movement of the blocking pin **58** to thereby prevent detent roller **53** leaving the detent notch **54**.

According to the embodiment shown in FIG. 16, the housing **96** of the control unit is provided with a side mounting base **97** from which an annular bearing flange **98** projects outwardly. The control housing **96** is adapted for mounting on a vertical panel **99** with the base **97** abutting the panel and the bearing flange **98** extending through the opening **100** in the panel. A mounting ring **101** is disposed on the side of the panel **99** oppositely from the mounting base **97** and a plurality of threaded members **102** extend through the ring and panel and into the housing base **97** to secure the housing **96** in place.

The bore **103** through the mounting base **97** and bearing flange **98** corresponds in size and is axially aligned with the bores **81** and **79** of the throttle face cam **16** and shift face cam **17** respectively. The control drive shaft **104** extends through the aligned bores **103**, **81** and **79** and projects therefrom on the side of panel **99** oppositely from housing **96** for mounting of the single lever **105**.

In the embodiment of FIG. 16, the throttle face cam **16** is secured directly onto the shaft **104** as by the set screw **106**. The set screw **106** serves to confine the shaft **104** axially and provides the drive connection between the shaft and face cam **16** while the coupling element **84** is freely slidable in the enlarged recesses or grooves **107** of the face cam as shown in FIG. 17. The direct drive connection between shaft **104** and face cam **16** as by set screw **106** as shown in FIGS. 16 and 17 is equally applicable to the embodiment of FIGS. 1–15. The operation of lever **105** of FIG. 16 is otherwise identical to that of lever **28** of the earlier embodiment described herein.

Various modes of carrying out the invention are contemplated as being within the scope of the following claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention.

I claim:

1. In a control for an engine driven marine propulsion unit having throttle and gear shift means, a housing, throttle and gear shift control arms pivotally mounted on said housing and operatively connected to the throttle and gear shift means respectively of the engine driven propulsion unit, a shaft member rotatably supported by the housing, separate actuating means for the throttle and gear shift control arms mounted on the shaft member adjacent to the corresponding arms, means separate from and carried by the shaft member for coupling the respective actuating means together to provide for operation of the throttle and gear shift means upon rotation of the shaft member, and means adapted to move the coupling means axially relative to the shaft member and thereby decouple the actuating means for the gear shift control arm from the actuating means for the throttle control arm whereby to provide for operation of the throttle means only upon rotation of the shaft member.

2. The invention as set forth in claim **1** wherein the coupling means are axially movable relative to the shaft member only when the actuating means for the gear shift control arm is in a predetermined position.

3. In a control for an engine driven marine propulsion unit having a throttle and gear shift means, a housing having opposed side walls, a throttle control arm pivotally mounted on one side wall within the housing and operatively connected to the engine throttle means to selectively open and close said throttle means, a gear shift control arm pivotally mounted on the other side wall within the housing and operatively connected to the gear shift means to selectively move said gear shift means between forward, neutral and reverse drive positions, a shaft member rotatably supported by the opposed housing side walls and operable by a single lever, independent actuating means for the throttle and gear shift control arms respectively and mounted on the shaft member adjacent to the corresponding arms, means separate from and carried by the shaft member for coupling the respective actuating means together to provide for operation of the throttle and gear shift means upon rotation of the shaft member, and means adapted to move the coupling means axially relative to the shaft member and thereby decouple the actuating means for the gear shift control arm from the actuating means for the throttle control arm whereby to provide for operation of the throttle means only upon rotation of the shaft member.

4. The invention as set forth in claim **3** wherein the means adapted to move the coupling means relative to the shaft member are rendered inoperable to decouple the actuating means for the gear shift control arm from the actuating means for the throttle control arm when the actuating means for the gear shift control arm is in the forward or reverse drive position.

5. The invention as set forth in claim **3** wherein the coupling means are movable axially relative to the shaft member only when the actuating means for the gear shift control arm is in the neutral drive position.

6. The invention as set forth in claim **3** wherein the means adapted to move the coupling means is a manually depressible member.

7. The invention as set forth in claim **3** wherein the actuating means for the gear shift control arm carries yielding detent means engageable with the housing, and interlock means disposed between the detent means and the coupling means, said interlock means being adapted to prevent axial movement of the coupling means when the actuating means for the gear shift control arm is in the forward or reverse drive position.

8. In a control for an engine driven marine propulsion unit having a throttle and gear shift means, a housing having opposed side walls, a throttle control arm pivotally mounted on one side wall within the housing and operatively connected to the engine throttle means to selectively open and close said throttle means, a gear shift control arm pivotally mounted on the other side wall within the housing and operatively connected to the gear shift means to selectively move said gear shift means between forward, neutral and reverse drive positions, a shaft member rotatably supported by the opposed housing side walls and operable by a single lever, a throttle face cam hav-

ing a hub mounted on the shaft member and an operative connection with the throttle control arm to actuate said arm, a gear shift face cam having a hub mounted on the shaft member and an operative connection with the gear shift control arm to actuate the latter, the hubs of said face cams having an axially extending groove communicating with the respective bores thereof and the hub of said gear shift face cam having a circumferential groove intersecting with the axial groove therein, a coupling element carried by the shaft member, said coupling element being slidably disposed in an axially extending slot provided in the shaft member and having a pair of axially spaced projections thereon extending into the respective axial grooves in the hubs of said face cams for coupling the face cams together to provide for operation of the throttle and gear shift means upon rotation of the shaft member, and means adapted to move the coupling element axially relative to the shaft member to align one of the coupling element projections with the circumferential groove in the hub of the gear shift face cam and thereby provide for rotation of the coupling element relative to the gear shift face cam whereupon rotation of the shaft member provides for operation of the throttle means only.

9. In a control for an engine driven marine propulsion unit having throttle and gear shift means, a housing, means pivotally mounted on said housing and operatively connected to the throttle and gear shift means respectively of the engine driven propulsion unit, a rotatable member supported by the housing and driven by a lever, means carried by the rotatable member for actuating the pivotal means operatively connected to the engine throttle, means mounted on the rotatable member and adapted to actuate the pivotal means operatively connected to the propulsion unit gear shift means, means separate from and carried by the rotatable member for coupling the gear shift actuating means to the rotatable member, and means adapted to move the coupling means axially relative to the rotatable member and thereby decouple the gear shift actuating means from the rotatable member and throttle actuating means whereby to provide for operation of the throttle means only upon rotation of the rotatable member.

10. In a control for an engine driven marine propulsion unit having throttle and gear shift means, a housing, means pivotally mounted within said housing and operatively connected to the throttle and gear shift means respectively of the engine driven propulsion unit, a shaft member rotatably supported by the housing and driven by a lever, cam means carried by the shaft member and adapted to actuate the pivotal means operatively connected to the engine throttle means, cam means freely mounted on the shaft member and adapted to actuate the pivotal means operatively connected to the propulsion unit gear shift means, a coupling element carried by the shaft member for coupling the gear shift cam means to the shaft member to provide for operation of the throttle and gear shift means upon rotation of the shaft member, and means adapted to move the coupling means axially relative to the shaft member and thereby decouple the gear shift cam means from the shaft member and throttle cam means whereby to provide for operation of the engine throttle means only upon rotation of the shaft member.

11. The invention as set forth in claim 10 wherein the means adapted to move the coupling element is a manually depressible pin member.

12. The invention as set forth in claim 10 wherein the coupling element is normally biased by spring means to the position coupling the gear shift face cam means to the shaft member and throttle face cam means, and wherein the means adapted to move the coupling element is manually movable against the bias of the spring means.

13. The invention as set forth in claim 10 wherein the gear shift face cam means carries yielding detent means engageable within a detent notch in the control housing when said face cam means is in the neutral drive position.

14. The invention as set forth in claim 8 wherein the gear shift face cam means carries radially movable yielding detent means disposable within a detent notch in a wall of the control housing when said face cam means is in the neutral drive position and engageable with said housing wall when said face cam means is selectively rotated to the forward and reverse drive positions, and radially extending pin means carried by the gear shift face cam means and associated with the yielding detent means and disposed in the plane of the intersection of the axially extending and circumferential grooves in the hub of said face cam means, said pin means being radially movable with the yielding detent means between a position free of the groove intersection when the detent means is disposed in the detent notch in the neutral drive position of said face cam means to thereby permit axial movement of the coupling element for throttle advance in the neutral drive position and a position within the groove intersection when the detent means is moved out of the detent notch upon rotation of said face cam means selectively to the forward and reverse drive positions to thereby block axial movement of the coupling element and prevent decoupling of the gear shift face cam means from the throttle face cam means during forward or reverse drive operation.

15. The invention as set forth in claim 10 wherein the control housing is adapted to be received within a suitable opening in a horizontally disposed panel means and is provided with peripheral flange means adapted to seat on the panel means adjacent to said opening.

16. The invention as set forth in claim 10 wherein the control housing is provided with a transversely extending mounting base and the shaft member projects outwardly from said base, said mounting base being adapted to seat against a vertically disposed panel means with the shaft member extending through a suitable opening in said panel means, and wherein the single lever is mounted on the shaft member on the opposite side of the panel means from the control housing.

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