

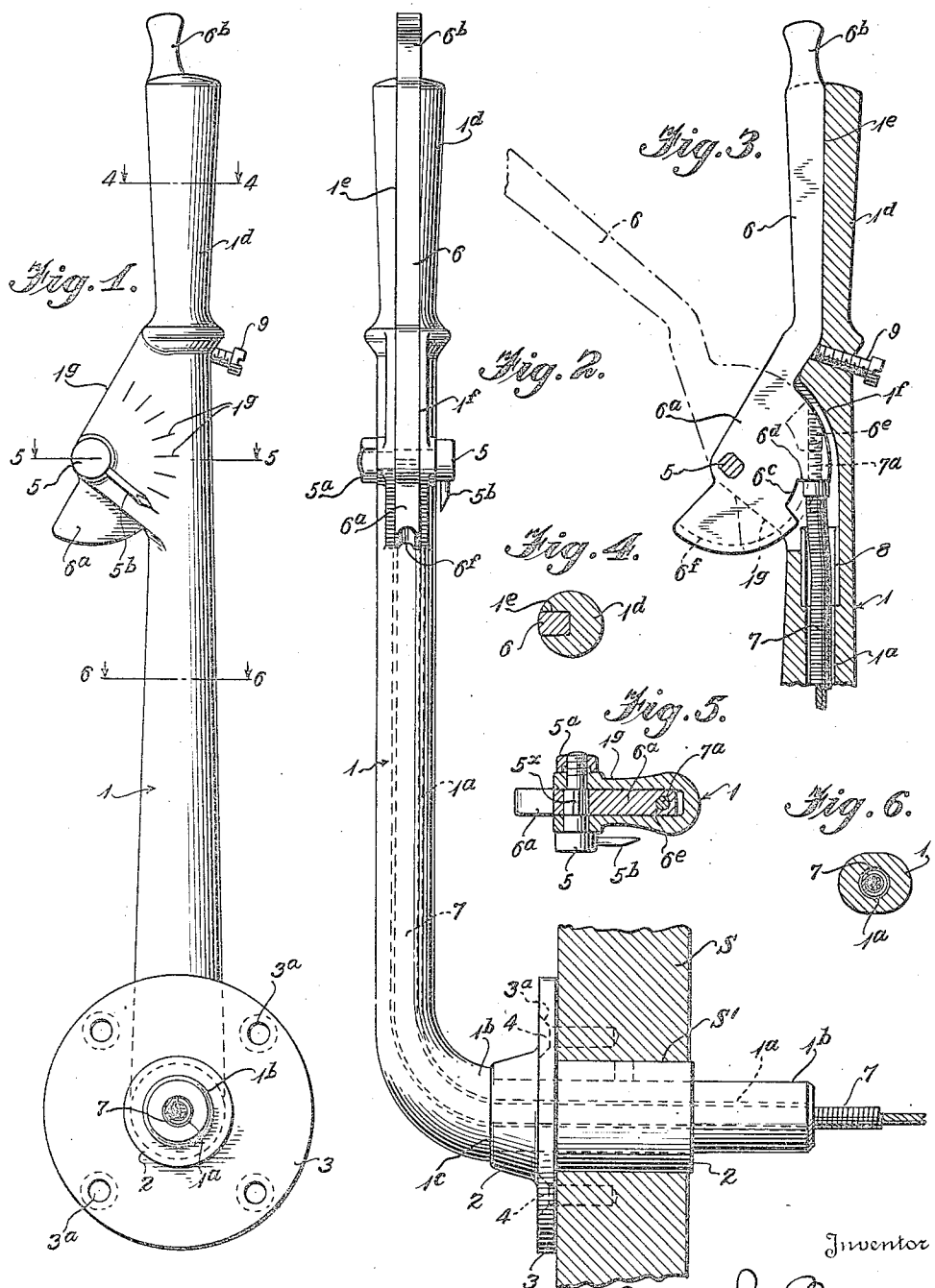
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COMBINATION LEVER

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COMBINATION LEVER

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12 Claims. (Cl. 74—491)

This invention is a novel combination lever, particularly adapted for use in motor boats or the like, and the principal object thereof is to provide a main lever adapted to operate the reverse gear clutch of the engine, said lever carrying adjacent its outer end a smaller lever pivoted thereon and operating through a flexible transmitter the throttle of the engine carburetor, said smaller lever being adapted when the throttle is closed to fill a slot in the main lever so as to lie flush therewith, and said smaller lever having a pointer mounted on the pivot pin thereof cooperating with a calibrated dial on the side of the main lever to show the extent of opening of the throttle for any position of the smaller lever.

Another object of the above invention is to provide a combination lever of the above type whereby the operator of the motor boat may by using one hand conveniently reverse the direction of movement of the boat and at the same time control the speed of rotation of the engine or propeller shaft, thus facilitating maneuvering the boat with respect to docks or the like.

Other minor objects of the invention will be hereinafter set forth.

I will explain the invention with reference to the accompanying drawing which illustrates one practical embodiment thereof to enable others familiar with the art to adopt and use the same; and will summarize in the claims the novel features of construction, and novel combinations of parts, for which protection is desired.

In said drawing:

Fig. 1 is a plan view of the combination lever showing the smaller throttle lever filling the slot in the main lever, in which position the throttle will be closed.

Fig. 2 is a side elevation of the combination lever shown in Fig. 1.

Fig. 3 is a longitudinal section through the outer end of the main lever showing the mounting of the smaller throttle lever thereon.

Fig. 4 is a transverse section on the line 4—4, Fig. 1.

Fig. 5 is a transverse section on the line 5—5, Fig. 1.

Fig. 6 is a transverse section on the line 6—6, Fig. 1.

As shown, the main lever 1 preferably comprises a casting having a bore 1a, extending there-through from a point adjacent the outer handle portion 1d of the lever to its inner end, the inner end of lever 1 being offset as at 1b at substantially right angles and having a shoulder 1c adapted to abut against a collar 2 having a flange

3 provided with perforations 3a for the reception of screws 4 or the like, whereby the lever 1 may be mounted upon a suitable support S having a bore S' through which the collar 2 extends, as shown in Fig. 2, the inner end of portion 1b of the lever projecting beyond the end of collar 2 and being adapted to carry an arm (not shown) directly connected through suitable linkage or the like with the reverse gear clutch of the engine (not shown) in the usual manner.

At the outer end of lever 1 is a hand grip portion 1d having a longitudinally disposed rectangular slot 1e therein extending from the outer end thereof to a point adjacent the end of bore 1a of lever 1, said slot also extending as at 1f through a substantially triangular lateral enlargement 1g of lever 1 adjacent the end of bore 1a, the slot 1f forming a continuation of the slot 1e. Preferably the inner wall of slot 1f in enlargement 1g is arcuate in form, as indicated in Fig. 3, and the bore 1a opens into the slot 1f, as shown. Extending through the slot 1f adjacent the apex of the triangular enlargement 1g is a pivot bolt 5 having a nut 5a, said bolt being of non-circular shape between the side walls of slot 1f as indicated at 5x (Fig. 5) for purpose hereinafter described.

Within the slot 1f mounted upon the non-circular portion 5x of bolt 5 is the sector-shaped hub 6a of a smaller lever, which lever is adapted in one position to fill the slot 1e in hand grip portion 1d of main lever 1, as shown, the outer end of lever 6 extending as at 6b slightly beyond the outer end of the hand grip portion 1d of lever 1 in order to permit the operator to readily grasp the lever 6 in any position of lever 1, the extending portion 6b being insufficient to interfere with the normal operation of lever 1.

The hub portion 6a when lever 6 is disposed in the slot 1e is provided with a peripheral recess 6c having one wall 6d disposed substantially normal to the bore 1a of lever 1 and opposite the upper end of said bore. Extending through said wall 6d in hub 6a is a tapped bore 6e into which is threaded the upper end 7a of a flexible transmitter 7 so as to be securely anchored therein, said end 7a being substantially aligned with the main portion of lever 1 when the smaller lever 6 is in position to close the throttle. Preferably a replaceable bushing 8 (Fig. 3) is provided in the upper end of bore 1a to offset undue wear.

The periphery of the hub portion 6a at the opposite side of slot 6c is provided with an arcuate groove 6f (Figs. 2 and 3) adapted to serve as a guide for the overlying portion of flexible trans-

mitter 7 when the throttle lever 6 is swung out of the slot 1e into the position shown in dotted lines in Fig. 3, to open the throttle; said guide groove 6f maintaining the flexible transmitter 7 from undue flexing or crinkling opposite the end of bore 1a. Flexible transmitter 7 is connected to the throttle of the carburetor of the engine (not shown) so that when lever 6 is swung outwardly, as shown in dotted lines in Fig. 3, the throttle will be opened, but when lever 6 is housed in the slot 1e the throttle will be closed.

Preferably, a set screw 9 is provided in lever 1 adjacent the base of hand grip portion 1d and adapted to enter slot 1e and contact the throttle lever 6 in order to provide adjustment of handle 6 when in closed position to control the idling speed of the engine.

As previously stated, the hub portion 6a of throttle lever 6 is mounted upon the non-circular portion 5x of bolt 5 and hence as lever 6 is swung the bolt 5 will rotate therewith. On the head of bolt 5 is a pointer 5b cooperating with a calibrated scale 1g (Fig. 1) to indicate to the operator the amount of opening of the throttle.

By the above construction the operator of the motor boat can by using one hand reverse the direction of movement of the boat by swinging lever 1 which operates the reverse gear clutch, and simultaneously by using the same hand control the speed of the engine by swinging the throttle lever 6, said construction providing a very simple, novel and efficient means for maneuvering the boat during docking or the like, and dispensing with the necessity of the operator having to use one hand to control the engine clutch and the other hand to control the engine throttle. Moreover, the lever 6 when in the slot 1e is housed in the hand grip portion 1d of lever 1 and in such position the same will not interfere with the operation of lever 1.

Where the engine is remote from the pilot house the pointer 5b cooperating with the calibrated scale 1g will visually indicate to the operator the speed of the engine or propeller shaft, thereby facilitating the operation of maneuvering the boat into desired position.

I do not limit my invention to the exact form shown in the drawing, for obviously changes may be made therein within the scope of the claims.

I claim:

1. A combination lever, comprising a main lever having a bearing portion adapted to be journaled in a support, a lateral enlargement on said lever adjacent its outer end having a slot extending therein, said slot extending to the outer end of said lever; said lever having a bore therein extending through said bearing portion and communicating with the slot in said enlargement; a second freely movable lever having a hub filling the slot in the enlargement and lever when in one position; a bolt transfixing the slot in the enlargement; said hub being pivoted on the bolt; and a flexible transmitter extending through said bore and having its outer end secured to said hub, whereby as the second lever is swung the flexible transmitter will be moved axially of the bore.

2. In a combination lever as set forth in claim 1, adjustable means entering the slot and engaging the second lever to limit the movement of the second lever in one direction.

3. In a combination lever as set forth in claim 1; said bolt being rotatable with the hub; a pointer carried by the bolt; and a calibrated scale on the exterior of the said enlargement cooperating with the pointer.

4. A combination lever, comprising a main lever having an offset inner end adapted to be journaled in a fixed support; a substantially triangular lateral enlargement on said lever adjacent its outer end having a slot extending therethrough; said slot continuing to the outer end of said lever; said lever having a bore therein extending from the journal at its inner end and communicating with the slot in said enlargement; a second freely movable lever having a sector-shaped hub filling the slot in the enlargement and lever when in one position; a bolt transfixing the slot in the enlargement adjacent the apex thereof; said hub being pivoted on the bolt; and a flexible transmitter extending through said bore and having its outer end secured to said hub, whereby as the second lever is swung the flexible transmitter will be moved axially of the bore.

5. In a combination lever as set forth in claim 4, a set screw in the main lever entering the slot and engaging the second lever to limit the movement of the second lever in one direction.

6. In a combination lever as set forth in claim 4, said bolt being rotatable with the hub; a pointer carried by the head of the bolt; and a calibrated scale on the exterior of the said enlargement cooperating with the pointer.

7. A combination lever, comprising a main lever having an offset inner end adapted to be journaled in a fixed support; a substantially triangular lateral enlargement on said lever adjacent its outer end having a slot extending therethrough, said slot continuing to the outer end of said lever; said lever having a bore therein extending from the journal at the inner end and communicating with the slot in said enlargement; a second freely movable lever having a sector-shaped hub filling the slot in the enlargement and lever when in one position; a bolt transfixing the slot in the enlargement adjacent the apex thereof; said hub being pivoted on the bolt; said hub having a recess in its periphery having one wall disposed opposite the end of the bore when the second lever is housed in the slot, said hub having a tapped bore extending through said wall; and a flexible transmitter extending through said bore and having its outer end threaded into said tapped bore, whereby as the second lever is swung the flexible transmitter will be moved axially of the bore.

8. In a combination lever as set forth in claim 7, a set screw in the main lever entering the slot and engaging the second lever to limit the movement of the second lever in one direction.

9. In a combination lever as set forth in claim 7; said bolt being rotatable with the hub; a pointer carried by the head of the bolt; and a calibrated scale on the exterior of the said enlargement cooperating with the pointer.

10. A combination lever, comprising a main lever having an offset inner end adapted to be journaled in a fixed support; a substantially triangular lateral enlargement on said lever adjacent its outer end having a slot extending therethrough, said slot continuing to the outer end of said lever; said lever having a bore therein extending from the journal at the inner end and communicating with the slot in said enlargement; a second freely movable lever having a sector-shaped hub filling the slot in the enlargement and lever when in one position; a bolt transfixing the slot in the enlargement adjacent the apex thereof; said hub being pivoted on the bolt; said hub having a recess in its periphery having one wall disposed opposite the end of the

bore when the second lever is housed in the slot, said hub having a tapped bore extending through said wall; and a flexible transmitter extending through said bore and having its outer end threaded into said tapped bore, whereby as the second lever is swung the flexible transmitter will be moved axially of the bore; the periphery of the hub at the side of the recess opposite from the tapped bore forming an arcuate guide for the flexible transmitter opposite the bore when the second handle is swung out of the slot.

11. In a combination lever as set forth in claim 10, a set screw in the main lever entering the slot and engaging the second lever to limit the movement of the second lever in one direction.

12. In a combination lever as set forth in claim 10; said bolt being rotatable with the hub; a pointer carried by the head of the bolt; and a calibrated scale on the exterior of the said enlargement cooperating with the pointer.

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