Nov. 8, 1966 E. A. NELSEN 3,283,738

STEERING ATTACHMENT FOR BOAT MOTORS

Filed April 7, 1965 2 Sheets-Sheet 1

Fig. 1

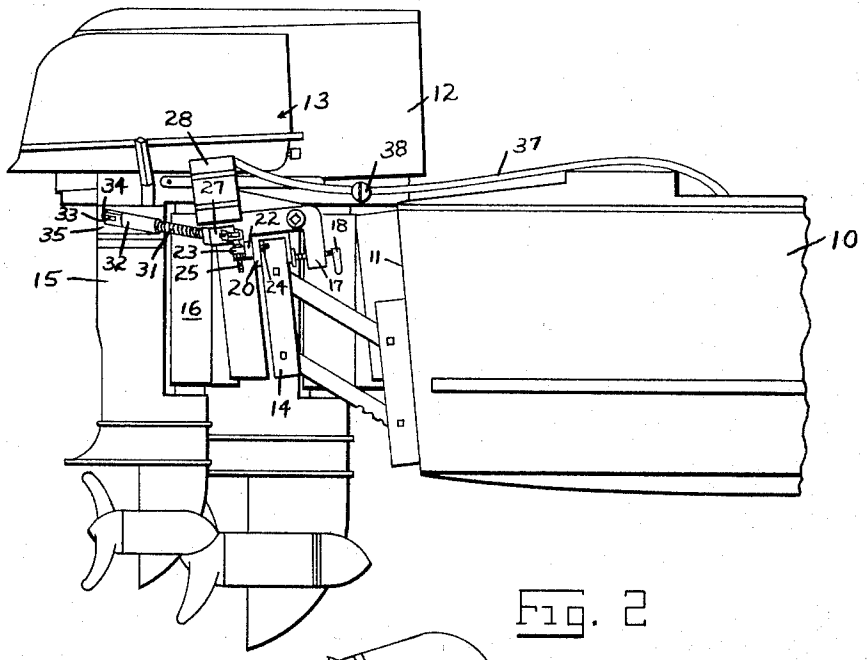
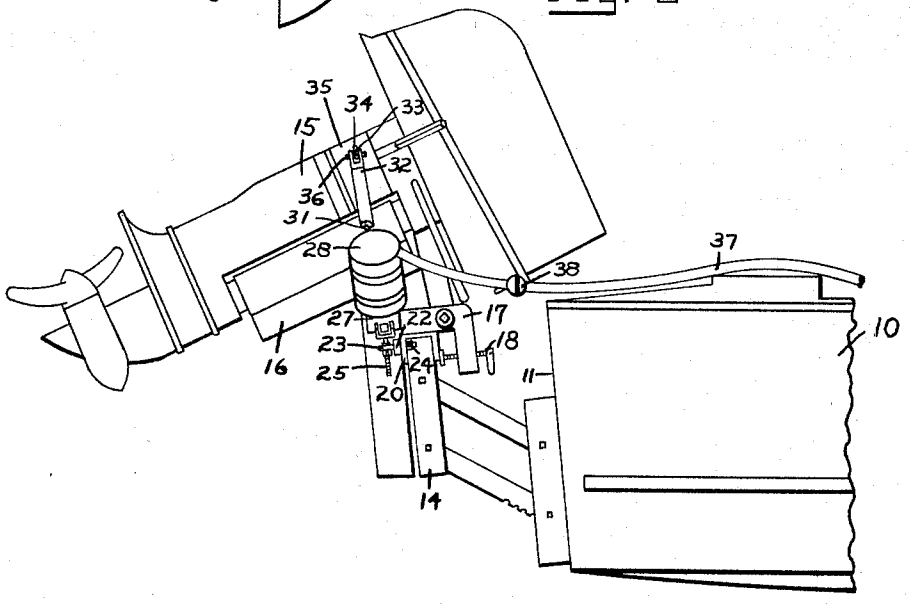


Fig. 2



INVENTOR.
ERNEST A. NELSEN
BY Wells & St. John
ATTYS.

Nov. 8, 1966 E. A. NELSEN 3,283,738

STEERING ATTACHMENT FOR BOAT MOTORS

Filed April 7, 1965 2 Sheets-Sheet 2

Fig. 3

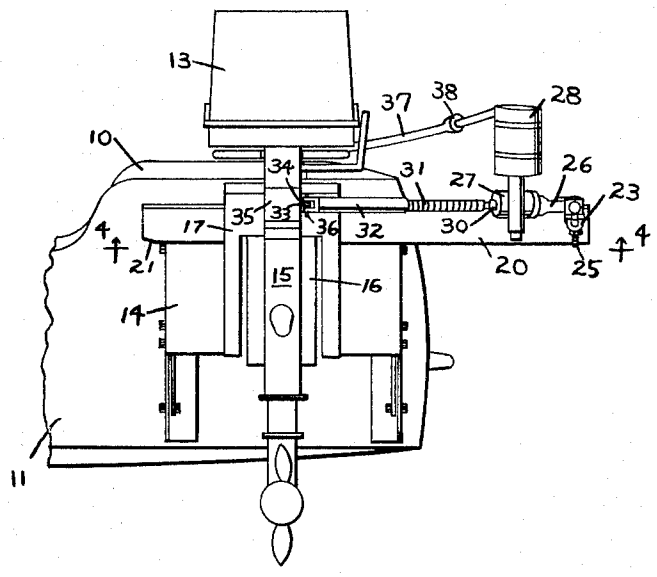


Fig. 4

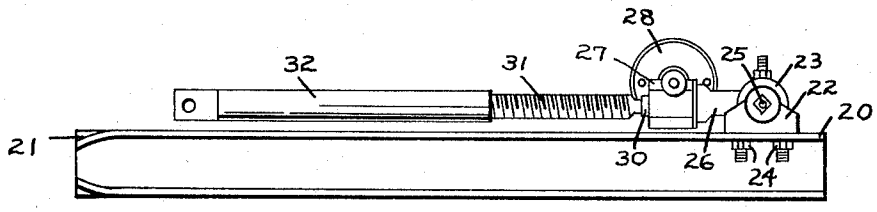
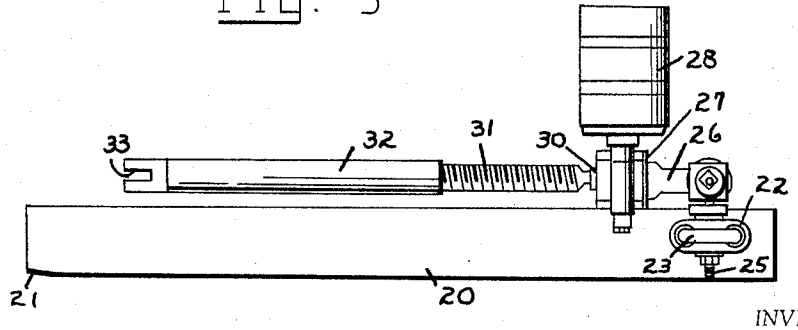


Fig. 5



INVENTOR.
ERNEST A. NELSEN

BY Wells & St. John
ATTYS.

United States Patent Office

3,283,738

Patented Nov. 8, 1966

3,283,738

STEERING ATTACHMENT FOR BOAT MOTORS

Ernest A. Nelsen, Bollinger Hotel, Lewiston, Idaho

Filed Apr. 7, 1965, Ser. No. 446,241
4 Claims. (Cl. 115—18)

This invention relates to a novel steering attachment for outboard motors mounted at the transom of a boat.

The present invention is concerned with a simple attachment that can be readily mounted on an auxiliary outboard motor to provide remote steering control of the motor without interfering with the normal motor operation and its usual capability to be tilted out of the water.

Outboard powered boats today generally are supplied with a large engine for powering the boat under normal circumstances. These large engines are not practical for slow travel, as is necessary when fishing or merely following along a shoreline. It is very common for such a boat to be equipped with a second outboard engine smaller than the first and mounted on an auxiliary transom that is carried on the larger main transom on which is mounted the larger motor. Often the smaller engine is mounted at a lowered location that makes impossible the use of the conventional handle provided for manual steering. The present invention provides a rather simple mechanical accessory powered by an electric motor to permit remote steering of a motor so mounted.

It is a first object of this invention to provide a positive steering attachment that will automatically hold any adjustment set on it, all such adjustments being readily made from the remote position in the boat.

Another object of this invention is to provide such an attachment that is universally adaptable to any type of engine and any type of transom mounting.

Another object of this invention is to provide a mechanical positive steering control attachment that will not restrict the usual ability of the motor to be tilted from the water when it is not in operation.

These and further objects will be evident from a study of the following disclosure, taken together with the accompanying drawings, which illustrate a preferred form of the invention.

In the drawings:

FIGURE 1 is a side elevation view of a rear portion of a boat equipped with a large main motor and having a smaller auxiliary motor provided with the instant steering attachment;

FIGURE 2 is a view similar to FIGURE 1, omitting the larger motor and showing the auxiliary motor tilted upwardly;

FIGURE 3 is a rear view of the auxiliary motor as mounted on the boat and provided with the attachment;

FIGURE 4 is an enlarged bottom view of the attachment when not mounted in use, the view of the attachment being substantially as seen along line 4—4 in FIGURE 3; and

FIGURE 5 is an elevation view of the attachment as shown in FIGURE 4.

The device desrcibed below is an attachment for use in combination with the conventional type of outboard motor mounting in use today to provide an auxiliary motor as an alternate to a larger outboard motor on a boat. The attachment is shown in FIGURES 4 and 5 apart from the combination in which it is used in FIGURES 1 through 3.

Referring to these drawings the boat **10** is shown with a main rear transom **11** on which is mounted a large main motor unit **12** with a small auxiliary motor unit **13** carried on an auxiliary transom **14** mounted on the main transom **11**. The use of an auxiliary transom is not essential to the persent disclosure and is generally provided in order to insure the proper elevational adjustment of the

auxiliary motor unit **13** relative to the larger transom **11**.

The motor unit **13** is conventional. It includes a motor housing **15** pivotally carried on a motor mount **16** for rotation about the axis of the drive shaft that leads from the upper motor unit to the lower propeller unit. The motor mount **16** includes a fixed bracket **17** with threadably engaged clamps **18** that normally secure the bracket **17** to the transom **14**. The motor housing **15** is therefore free to turn about the axis of the drive shaft for steering purposes and is free to pivot upwardly relative to the bracket **17** so that the unit can be lifted from the water (FIGURE 2).

The steering attachment can best be understood from the disclosure of FIGURES 3 through 5. It includes a rigid downwardly open channel **20**, the flanges of which are bent inwardly at one end **21** to assist in positioning the channel **20** over the top end of the transom **14**. Channel **20** fits over the top edge of transom **14** and is held in place by engagement of the manually adjustable clamps **18**. It provides a fixed supporting member on the transom **14** that protrudes outwardly to one side of the motor unit **13**.

At the outer end of channel **20** is carried a bracket including a bearing **22** held in place by U-bolt **23** and nuts **24**. The bearing **22** pivotally mounts a pivot stem **25** which in turn pivotally carries a bracket **26**. Thus, the bracket **26** is free to pivot relative to the channel **20** about the axis of its connection to stem **25** and also about the pivotal axis of stem **25** within bearings **22**. Both of these axes are perpendicular relative to one another.

Fixed at the outer end of bracket **26** is a transmission housing **27** that carries a motor unit **28**. The motor unit **28** powers the transmission unit **27** through a conventional worm gearing arrangement that is irreversible. The motor **28**, however, is reversible, and is capable of turning the output shaft **30** of the transmission unit **27** in either direction of rotation.

Mounted on the output shaft **30** of the transmission unit **27** is an extensible member comprising an externally threaded section **31** and an internally threaded section **32**, each being threadably engaged with the other so that longitudinal adjustment relative to one another is possible by rotation of either member. The outer end of member **32** is slotted at **33** to receive an ear **34** of a bracket **35** fixed to the motor housing **15**. The location of the ear **34** must be radially offset from the axis of the drive shaft of the motor unit **15** about which it is pivotally mounted on the motor mount **16**, thereby insuring the necessary steering leverage to pivot the motor housing **15**. The outer end of member **32** is pivotally connected to the ear **34** by a releasable pin **36**. The axis of the pivotal connection formed due to the pin **36** is perpendicular to the longitudinal axis of the coaxial members **31, 32**. Also, it is to be noted that the pivotal axes of the bracket **26** relative to the panel **20** are each perpendicular to the axis of the members **31, 32**.

The motor **28** is a conventional motor unit controlled by switches (not shown) that can be located at any desired remote location within the boat **10** and connected to the motor unit **28** by electrical leads **37**, which may include a suitable releasable coupling **38**. The externally threaded member **31** can therefore be turned in either direction by selective operation of the motor unit **28**.

When the attachment has been mounted as shown in FIGURES 1, 2 and 3, the channel **20** will be fixed relative to the transom **14** and the outer end of the member **32** will be pivotally connected to the ear **34** by means of the releasable pin **36**. The only additional connection that is not conventional is a power connection to the normal starting battery of the large motor unit **12** through the required control switches to power the electric motor **28**.

Operation of the motor **28** will cause the member **31** to rotate relative to member **32**, thereby either lengthening or shortening the effective distance between the bracket **26** and the ear **34**. This will pivot the motor housing **15** about its axis on the motor mount **16**. In this manner, the auxiliary motor unit **13** can be steered from a remote location.

The attachment does not in any manner interfere with the normal ability of the motor unit **13** to be tilted upwardly as seen in FIGURE 2. The tilting of the motor will not bind the connection between the channel **20** and the motor housing **15**, since the member **32** is free to pivot about its longitudinal axis relative to the member **31**, thereby providing a free universal pivot connection to the steering attachment and also maintaining the steering adjustment originally set on the unit so that the motor unit **13**, when again lowered into the water, will be set at the same angle relative to transom **14** as it was prior to be lifted.

Various modifications can be made in the details of this structure without deviating from the basic concept of a positive steering control attachment that is simple in nature, readily adapted to any boat and motor and designed so as not to interfere with the normal use of the motor unit. For this reason, only the following claims are intended to limit or restrict the scope of my invention.

Having thus described my invention, I claim:

1. A steering attachment for an outboard motor mounted on an upright boat transom, the motor including a motor frame pivotally mounted relative to the transom for motion about an upright axis for steering purposes, comprising:

a rigid support fixed to the transom, one end of said support protruding outwardly to one side of the motor frame;

a longitudinally extensible member pivotally connected at one end to the motor frame about a pivotal axis parallel to and spaced radially outward from the upright axis of the motor, said extensible member comprising first and second coaxial longitudinal sections threadably engaged by one another along a longitudinal axis perpendicular to the pivotal axis by which said member is connected to said motor frame, the sections being threadably engaged in such fashion as to vary the effective length of said member along said

longitudinal axis responsive to rotation of one section relative to the other;

a bracket mounted on said support adjacent the outer end thereof including a first element rotatably carrying the remaining end of said extensible member for movement about the longitudinal axis thereof, and a second element, said second element being pivotally connected to said first element about a first bracket axis perpendicular to the longitudinal axis of said extensible member, said second element also being pivotally mounted on said support about a second bracket axis perepndicular to both said first bracket axis and the longitudinal axis of said extensible member;

and power means on said first bracket element operatively connected to one of said sections of said extensible member to selectively rotate said one section of said extensible member relative to the remaining section about the longitudinal axis thereof.

2. An attachment as defined in claim **1** wherein said support comprises a rigid channel adapted to fit over the top edge of the boat transom and to be clamped to the transom by the mounting clamps of the motor mount.

3. An attachment as defined in claim **1** wherein said power means comprises a motor fixed to said first bracket element, said motor having a rotatable output member drivingly connected to said one section of the extensible member through a worm gear drive.

4. An attachment as defined in claim **1** wherein said power means comprises a reversible electric motor mounted on said first bracket element and having a rotatable output member drivingly connected to one section of said extensible member through a worm gear drive.

References Cited by the Examiner

UNITED STATES PATENTS

2,916,008	12/1959	Bauer	115—18
2,966,069	12/1960	Wise	74—424.8
3,111,042	11/1963	Hoover	74—424.8 X
3,171,383	3/1965	Abelow	114—144 X

MILTON BUCHLER, *Primary Examiner.*

ANDREW H. FARRELL, *Examiner.*