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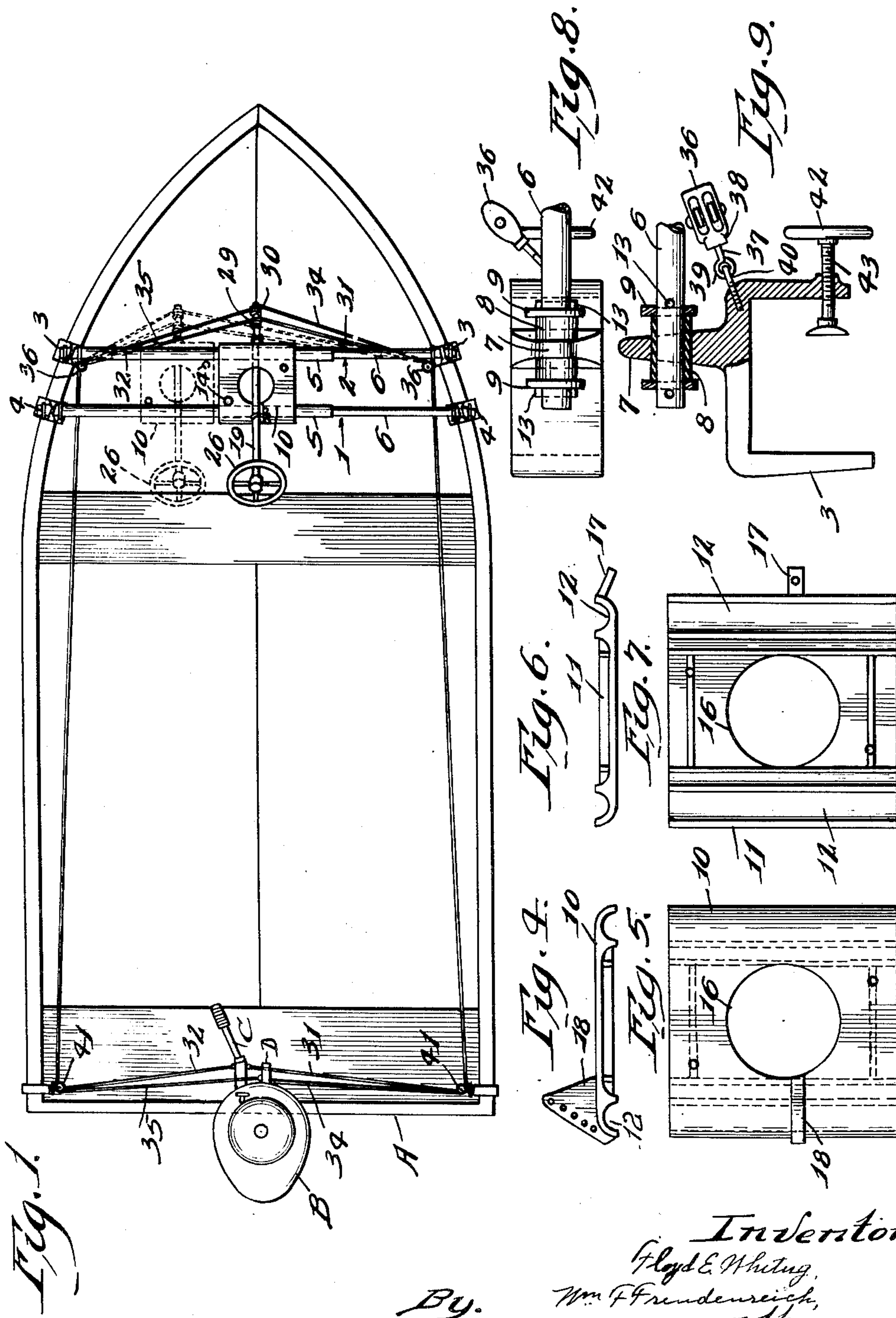
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POWER BOAT STEERING AND CONTROL MEANS

Filed May 15, 1951

2 SHEETS—SHEET 1



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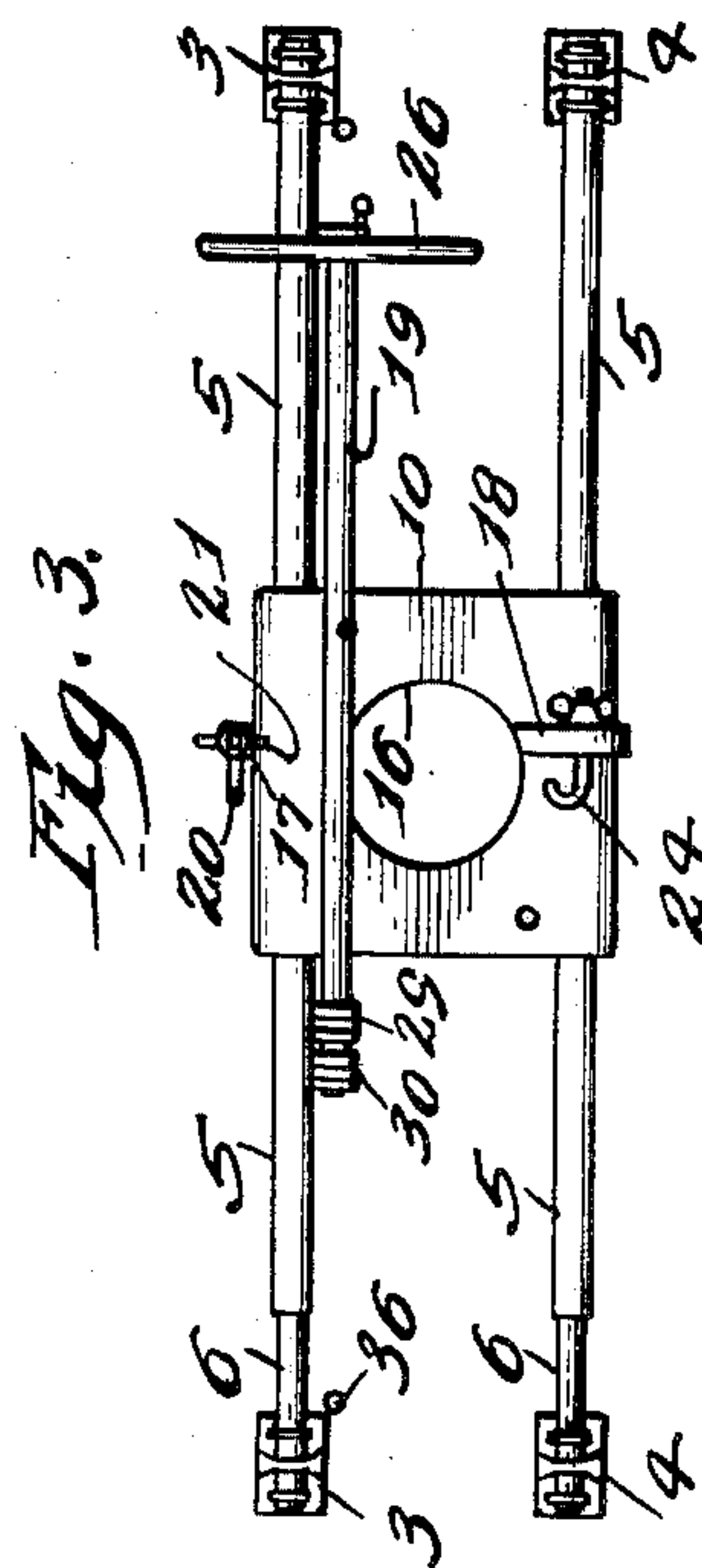
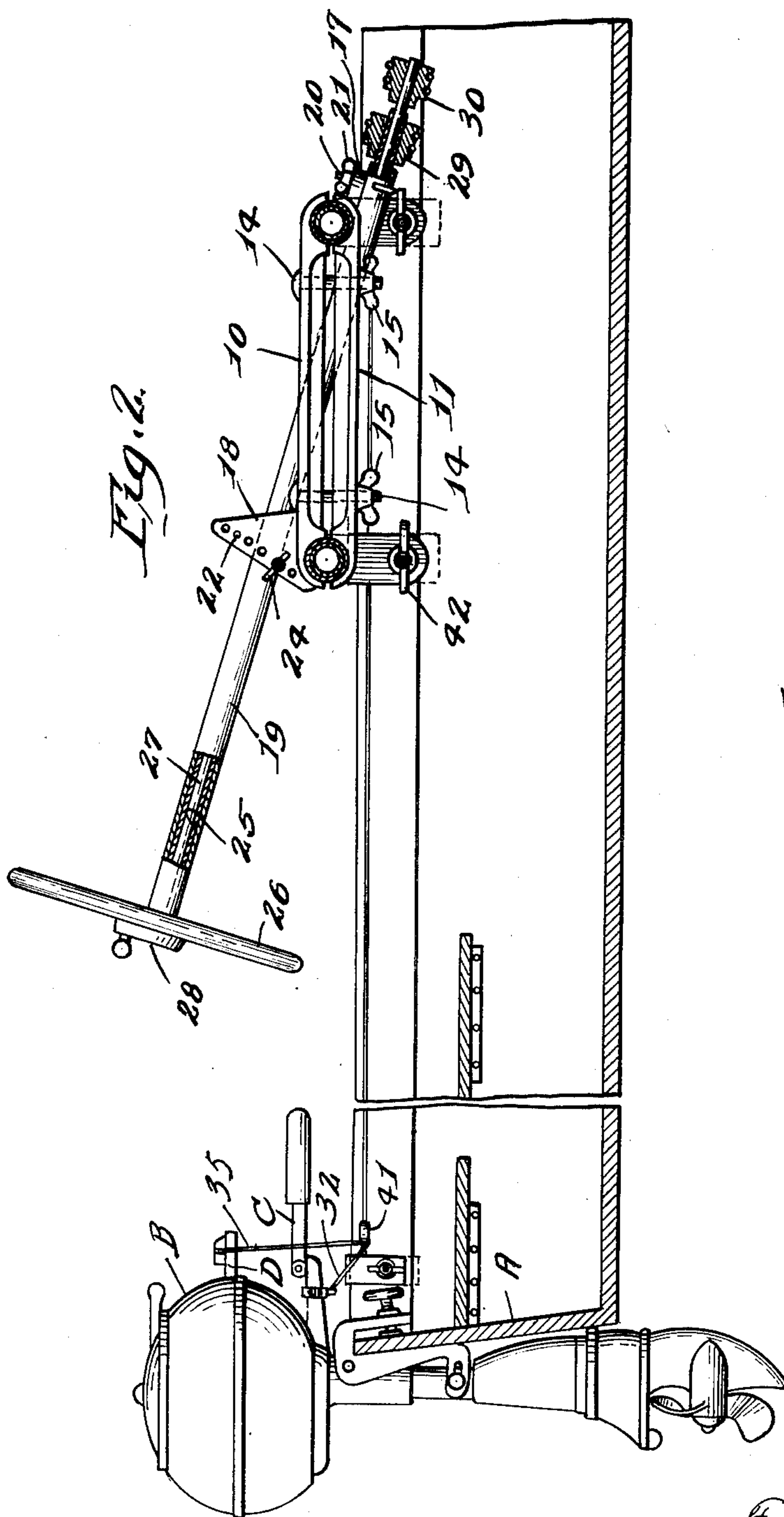
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UNITED STATES PATENT OFFICE

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POWER BOAT STEERING AND CONTROL MEANS

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9 Claims. (Cl. 114-144)

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There have been in use or suggested for use various forms of gear to be applied to small motor-driven boats for steering them and for throttle control, from points remote from the motors. It is my purpose to create such a gear or rigging as shall be very simple and constitute a substantial improvement over any of which I have any knowledge. For instance, I desire to make an apparatus that can be arranged in a small, light bundle for transportation to and from any boat to which one may desire to apply the same, and which can easily be applied to boats of various sizes and shapes.

As in other apparatuses of this kind, I employ flexible cables to be connected to a throttle lever and tiller, suitable clamps to be fastened to the sides of a boat and having guides thereon for the cables, and a master controller for operating the cables. It is in the master controller that the most important features of my invention are found, namely it is a unit comprising a steering wheel and a throttle wheel, together with a readily assembled collapsible structure to support the same in any convenient position on a boat.

The various features of novelty whereby the present invention is characterized will hereinafter be pointed out with particularity in the claims, but for a full understanding of the invention and of its objects and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawings, wherein:

Figure 1 is a top plan view of a small boat provided with an outboard motor and with my improved control apparatus; Fig. 2 is a longitudinal section, on a larger scale, showing fragments of the boat and the control apparatus; Fig. 3 is a plan view, on still another scale, of the steering column device and the supporting structure therefor, disconnected from the boat and ready for transportation or storage; Figs. 4 and 5 are respectively an edge view and a top plan view of the upper half of the table that supports the steering column; Figs. 6 and 7 are respectively an edge view and a top plan view of the lower half of such table; Fig. 8 is a top plan view, on an enlarged scale, of one of the clamps and a fragment of the corresponding member of the two cross members that support said table; and Fig. 9 is a view, partly in side elevation and partly in section, of the clamp and cross member shown in Fig. 8.

Referring to the drawings, A and B are, respectively, a conventional small boat and a de-

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tachable outboard motor at the stern of the boat; C and D being, respectively, the usual tiller and the throttle lever. Two parallel members 1 and 2 are arranged athwart the boat in any desired position lengthwise of the latter. Suitable clamps, 3 and 4, carried on the ends of these members, embrace the upper marginal portions of the sides of the boat to fix the cross members releasably to the boat. Each of the cross members is composed of two metal tubes 5 and 6 in telescoped relation to each other; the metal preferably being aluminum for the sake of lightness.

The clamps are inverted U-shaped members, as shown in Figs. 8 and 9, each having on top thereof a vertical fin or ear 7 to receive an end of a cross member. The holes in the ears are larger in diameter than the tubes to provide room for flexible rubber bushing sleeves 8. The rubber sleeves are held in place on the tubes by metal washers 9 at the ends of the sleeves, together with pins or keys 13 extending through the tubes beside the outer faces of the washers.

The thin ears allow the clamps to adjust themselves by rocking through considerable angular distances about axes at right angles to the corresponding tubes; the rubber sleeves preventing looseness in the joints in the various angular positions of the clamps.

The two cross members are tied together by a little platform or table of aluminum formed of two plate-like halves 10 and 11 arranged one above the other. On the under side of the upper table section and on the upper side of the lower section are semicylindrical bearing seats, 12, within which the large tubes 5 are seated when the cross members and the table are assembled. The table sections are secured together, in clamping relation to the cross members, by bolts 14 provided with wing nuts 15 for easy assembly and disassembly. Each table section has a large opening 16 in the center.

Cooperating with the table is a steering column, comprising three telescoped tubes, that extend diagonally, in a plane at right angles to the cross members, through the open center of the table. On the front edge of the lower table section is an ear 17 while at the rear of the upper table section is an upwardly projecting wing 18, aligned with each other. The forward end of the outer tube 19 of the steering column engages with one side of wing 18 and passes below ear 17. A J-shaped bolt 20, provided with a wing nut 21 passes through ear 17, with the hook portion thereof forming a seat for the column.

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Wing 18 contains a series of bolt holes 22 that may be arranged in a row extending upward and forwardly. A bolt 24, similar to bolt 20, may extend through any one of the holes 22 in wing 18 to clamp the column in any one of a series of angular positions. On the upper end of the larger of the two inner tubes, 25, is a steering wheel 26; while the innermost tube 27 has on its upper end a small throttle wheel 28. Tube 25 projects beyond the lower end of the stationary tube 19 and is there provided with a pair of spools formed into a double spool 29. Tube 27 projects beyond the lower end of tube 25 and has on the projecting part a pair of spools formed into a double spool 30.

The tiller and the throttle lever are operated by four flexible members 31, 32, 34 and 35, which will be referred to as cables, although they may be cables, wires, chains or other flexible devices. Two of the cables, 31 and 32, extend from the tiller to spool 29, while the other two, 34 and 35, are connected at their ends to the throttle lever and spool 30, respectively.

Suitable guides for the cables must be provided along the sides of the boat. Thus, each clamp 3 has attached thereto a double pulley 36 connected to a stem or link 37 by a universal joint 38; the stem terminating in an eye 39 interengaged with an eye fixedly anchored to the body of the clamp. Cables 31 and 32 pass in opposite directions from spool 29 over one of the sections of one of the double pulleys while cables 34 and 35 extend in opposite directions, over the remaining section of the other pulley. The cables also pass over other guides, conveniently pulleys 41 similar to pulleys 36, on the sides of the boat near the stern.

It will be seen that, by loosening the bolts 14, the table is released sufficiently to permit it to be moved into any desired position along tubes 5, 5, so as to occupy the position most convenient for the user.

With the table adjusted to bring the steering column in the desired position transversely of the axis of the boat, and the column adjusted to bring it at the desired angle to the horizontal, the speed and direction of movement of the boat may be regulated by manipulation of the little throttle wheel and the steering wheel.

The apparatus may be removed from the boat by simply releasing the clamps and disconnecting the cables from the tiller and throttle lever, if the motor is to remain on the boat or is to be removed independently. For convenience in transporting and storing the apparatus, the steering column may be detached and laid on the table as in Fig. 3; the overall length of the collapsed structure being decreased by pushing the tubular elements 6, as far as possible, into the outer tubes 5. By using wing nuts on J-bolts 14 and 20 and correspondingly shaped heads 42 on the clamp screws 43, the assembly and disassembly of the apparatus, the placing of the same on and its removal from a boat, and the adjustments of the table and steering column may be made quickly and easily. None of the bolts need be completely detached at any time and thus there is no danger of mislaying or losing them.

The unit comprising the steering column and its supports, although of small weight, is sturdy and durable and its construction is such that the cost of the same is reasonably low.

It will thus be seen that I have produced a simple, novel and inexpensive rigging that is

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sufficiently small and light for convenient transportation to and from a place of use; that can be easily applied to and detached from boats of various sizes and shapes; and that permits the manually operable wheels or the like to be adjusted as to height and laterally as well as lengthwise of the boat.

I claim:

1. A steering and control unit adapted to be mounted on a power boat comprising two members each composed of two elements connected together in a manner to allow such members to be varied in length, clamps on the ends of said members to secure them to the sides of and athwart the boat, a table upon and secured to corresponding elements of said members for adjustment along the latter, said table containing a large opening, a steering column extending through said opening at an acute angle to the plane of the table, means at one side of the said opening securing the lower end of the column to the table, and a supporting device rising from the table at the opposite side of said opening to the column and fastened to the column to support it.

2. A steering and control unit adapted to be mounted on a power boat comprising two members each composed of a tube and an element telescoped within and projecting from one end of the tube, clamps on the ends of said members to secure them to the sides of and athwart the boat, a table upon and secured to the said tubes for adjustment along the latter, the said table containing a large opening, a steering column extending through said opening, means at one end of the opening securing the lower end of the column to the table, a supporting device rising from the table at the opposite end of the opening to the column, and means cooperating with said device and the column to lock the column to the table in any one of a plurality of angular positions relative to the plane of the table.

3. A steering and control unit adapted to be mounted on a power boat comprising two members each composed of a tube and an element telescoped within and projecting from one end of the tube, clamps on the ends of said members to secure them to the sides of and athwart the boat, a table composed of an upper section and a lower section one of which overlies and the other underlies corresponding elements of said members, means to secure said table sections together in clamping relation to the said members, said table containing an opening, a steering column extending through said opening at an acute angle to the plane of the table, means on the lower table section to fasten the lower end of the column to the table, and a support for the column rising from the upper table section at a remote point from the means to fasten the lower end of the column.

4. A unit as set forth in claim 3, wherein the means for fastening the column to the table consists of a bolt on the table beside the lower end of the steering column, the bolt being provided with a hooked end to fit under the column, together with a wing rising from the table beside the column and provided with means to grip the column rearwardly from said bolt.

5. A steering apparatus unit comprising two members each composed of a tube and an element telescoped within and projecting from one end of the tube, clamps to secure said members to the sides of and athwart a boat, each clamp containing a web-like part having therein a hole

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through which an end of one of said members extends, a soft rubber bushing in each of said holes to allow automatic angular adjustment of the clamps, a table upon and secured to the said tubes for adjustment along the latter, a steering column, and means adjustably securing the column to the table.

6. A steering apparatus unit comprising two parallel, elongated members each composed of a tube and an element slidably mounted in and projecting beyond one end of the tube, two plates one of which is below and the other above the tubes, the plates having seats in which the tubes are engaged, detachable fastenings securing the plates together in clamping relation to the tubes and thereby forming thereon a table, the table containing an opening in the center, a steering column extending diagonally in the downward direction, through said opening, an anchor at one edge of the table holding the column against sidewise movement, a vertical wing on the table inwardly from said edge beside the column and provided with a row of holes one above the other, and a device extending through a selected hole in said row and engaged with said column to lock the same in place.

7. A unit as set forth in claim 6, wherein there extends through and is rotatable in said column a tubular member having on its upper end a steering wheel and at its lower end a pair of spools, and a throttle-controlling member extending through and rotatable in such tubular member

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and having on its upper end a finger piece and on its lower end a pair of spools.

8. A support for a steering column comprising two long, spaced, parallel members adapted to be placed athwart a boat, a table on and secured to said members, clamps adapted to embrace the upper edges of and be secured to the sides of the boat, each clamp having thereon an upstanding ear containing an opening, each end of each of said members extending through the opening in one of said ears, and stops on said members to hold them against lengthwise movement in said ears.

9. A support as set forth in claim 8 wherein each ear contains a rubber-like bushing to allow limited swinging movements of said members relative to the clamps.

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