

E. C. CLOSTERMEYER.
BOAT.
APPLICATION FILED NOV. 14, 1910.

1,018,809.

Patented Feb. 27, 1912.

3 SHEETS—SHEET 1.

Fig. 1.

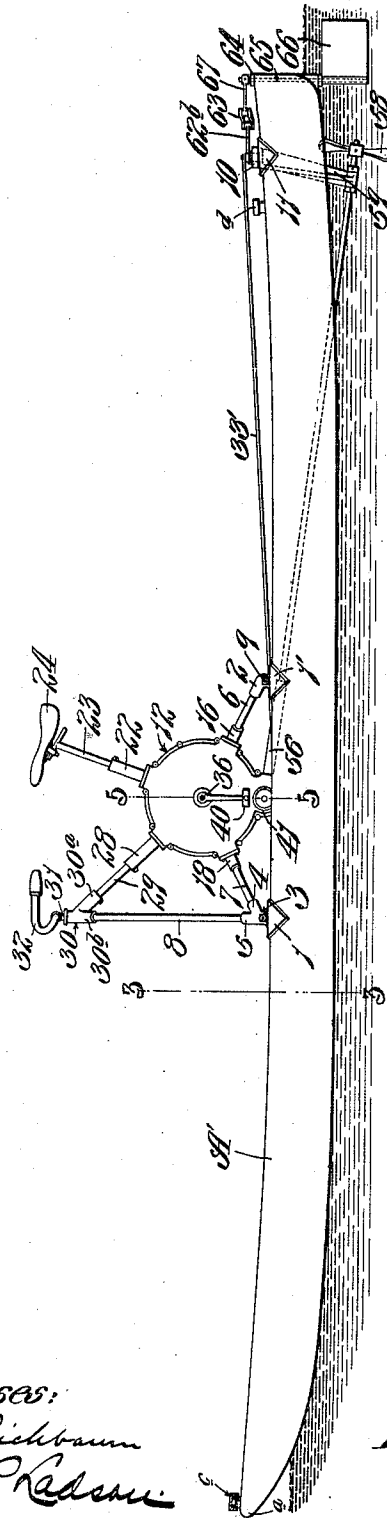
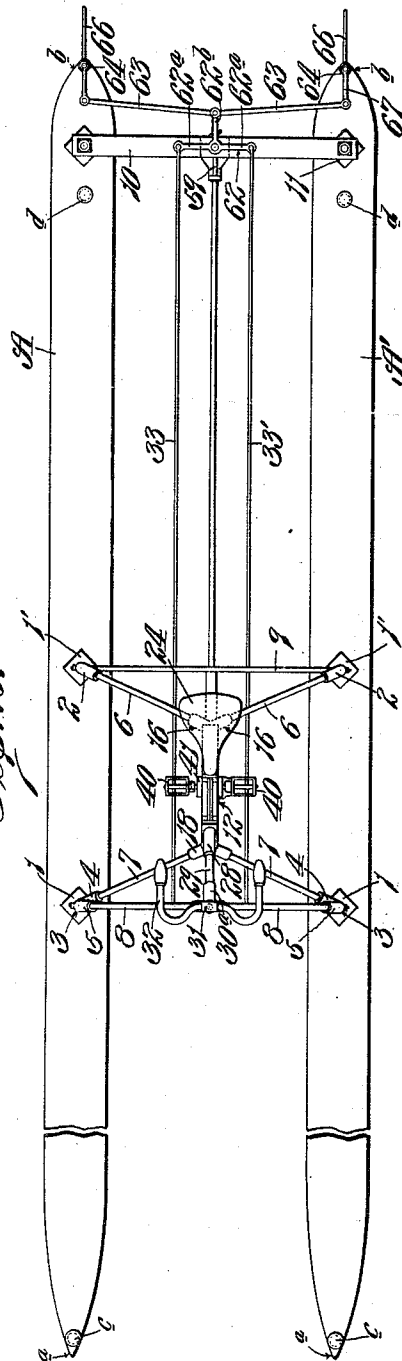


Fig. 2.



Witnesses:
Geo. C. Dickmann
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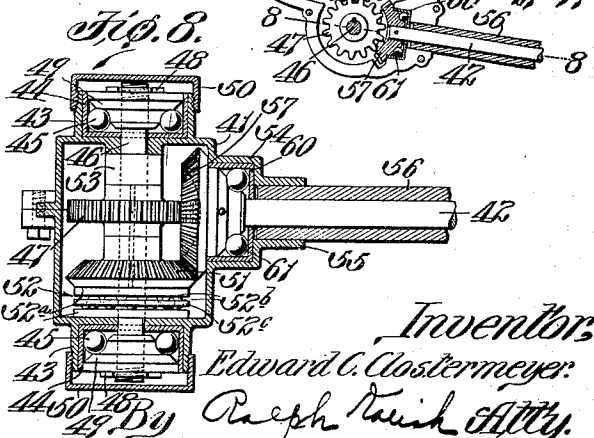
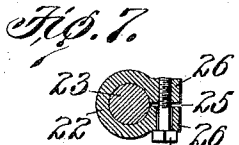
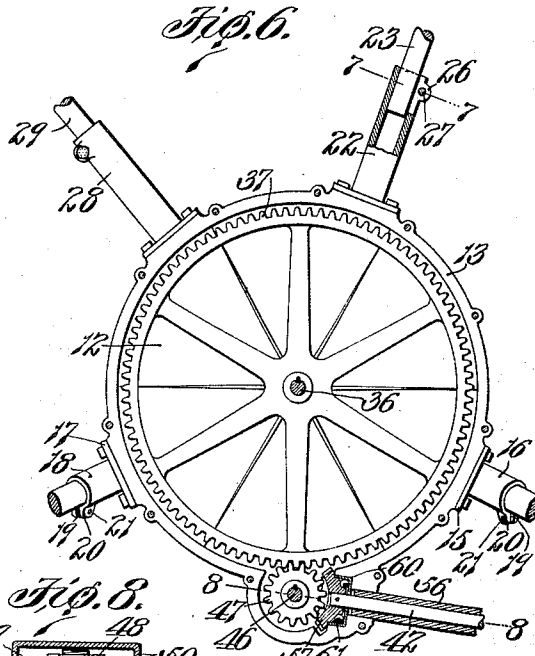
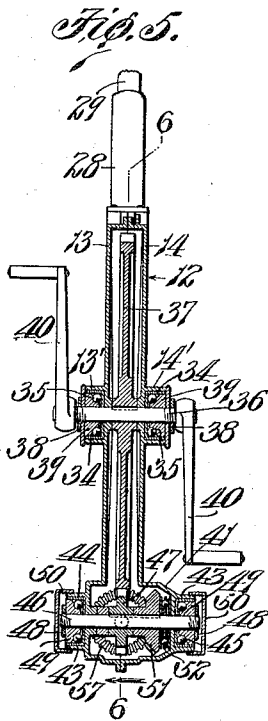
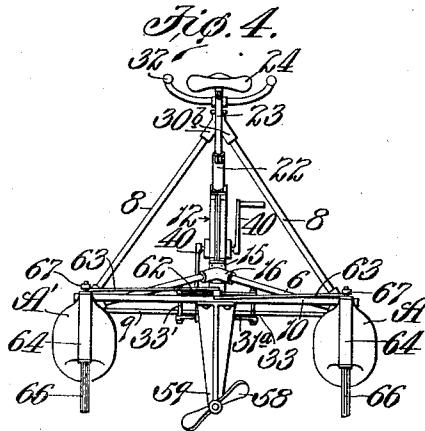
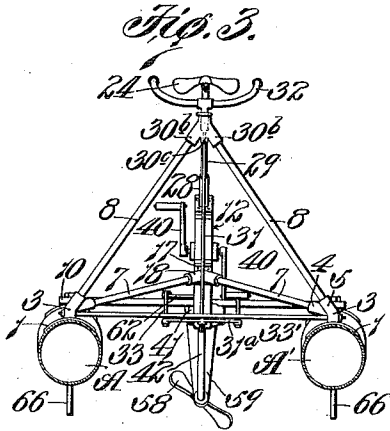
Inventor,
Edward C. Clostermeyer.
By Ralph Kreich Atty.

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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 9.

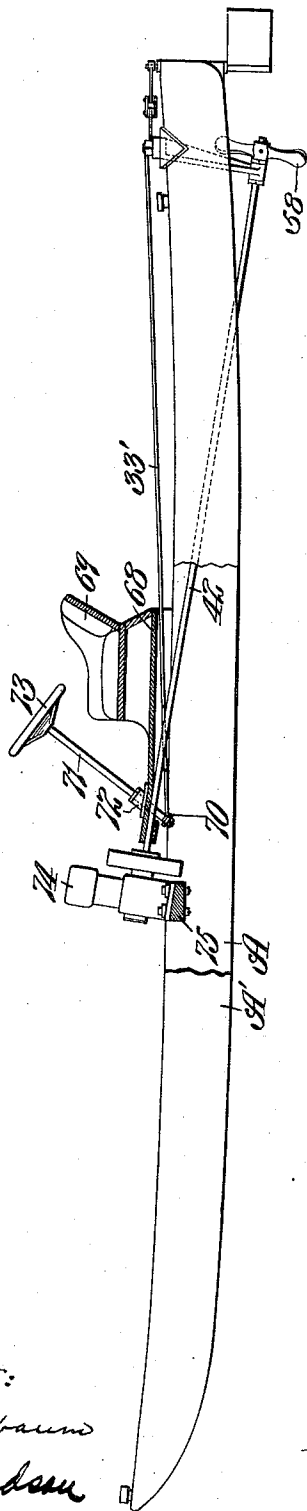
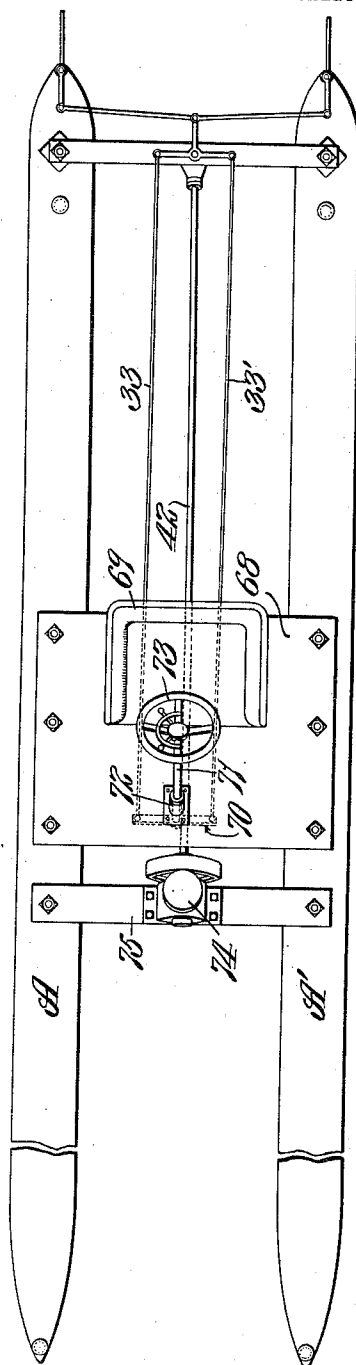


Fig. 10.



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UNITED STATES PATENT OFFICE.

EDWARD C. CLOSTERMEYER, OF ST. LOUIS, MISSOURI.

BOAT.

1,018,809.

Specification of Letters Patent.

Patented Feb. 27, 1912.

Application filed November 14, 1910. Serial No. 592,219.

To all whom it may concern:

Be it known that I, EDWARD C. CLOSTERMEYER, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Boats, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which—

10 Figure 1 is a side elevational view of the preferred form of my new boat, showing the same as a water-cycle, the propeller and its shaft being driven by foot-power; Fig. 2 is a top plan view of the same; Fig. 3 is a sectional view on the line 3—3, Fig. 1; 15 Fig. 4 is a rear elevational view; Fig. 5 is an enlarged detail sectional view on the line 5—5, Fig. 1; Fig. 6 is a sectional view approximately on the line 6—6, Fig. 5; Fig. 20 Fig. 7 is a detail sectional view on the line 7—7, Fig. 6; Fig. 8 is an enlarged detail sectional view on the line 8—8, Fig. 7; Fig. 9 is a side elevational view partly in section of a modified form of my new boat, showing the same as a motor-boat, the propeller and its shaft being motor-driven; and Fig. 10 is a top plan view of the same.

This invention relates to certain new and useful improvements in boats, the objects of 30 my invention being to provide a boat which is comparatively light in weight and simple in construction, which will not readily capsize or sink, which may be guided with ease and used with pleasure and comfort, and 35 which may be propelled or driven at a fair speed with a small outlay of power, and to improve generally upon boats of the kind described.

40 With this object in view, my invention resides in the novel construction of the several parts of my boat and in the novel arrangement and combination of the same, all as will hereinafter be described and afterward pointed out in the claims.

45 In the drawings, wherein like reference-characters or numerals refer to like parts throughout the several views, A and A' indicate what might be called the boat body-members. These body-members A and A', 50 which are preferably constructed of any suitable sheet-metal, such as galvanized iron, are air-tight and substantially tubular throughout the greater part of their length, being, however, preferably tapered at their 55 forward ends or bows to a rather sharp point, as at *a*, see particularly Figs. 1 and 2,

and flattened or narrowed vertically at their rear ends, as at *b*, as shown particularly in Figs. 2 and 4. These members or tubes A and A' are also preferably gradually curved 60 or swayed longitudinally or from bow to stern, somewhat similar to a skiff, as shown particularly in Fig. 1, so that the boat may be more easily propelled or driven on the water, said members or tubes A and A' being 65 adapted to rest in the water and being driven or propelled and guided, as more fully hereinafter appearing. Body-members or tubes A and A' are disposed or arranged parallel with each other throughout their 70 length and are spaced apart any suitable distance, being firmly held or maintained in such position as hereinafter described. These tubes or members A and A' being substantially cylindrical throughout their 75 length and spaced apart as shown and being adapted to set down in the water, it will be seen that the boat will not readily capsize or overturn, and, said tubes A and A' being 80 also hollow and air-tight, the boat is practically non-sinkable. Should either or both of said tubes be punctured, so to speak, and water enter the interior thereof, the boat may be turned on end to empty such water 85 through a suitable cap-covered opening *c* in the bow of each of said tubes, the leak or puncture located, for instance, by means of air pumped into said tubes through suitable cap-covered valves *d* preferably at the stern 90 of each of said tubes, and the tubes then readily repaired. These tubes or members A and A' may be of any length and diameter as desired, depending upon the load or weight which the particular boat is designed to carry, for it will be clear that the greater 95 the diameter and length of these tubes, the greater the volume of water which will be displaced thereby, and, consequently, the greater the diameter and length of said tubes the greater the load or weight which the 100 boat will safely carry. On their upper surfaces and preferably to each side of the longitudinal center thereof, each of said tubes A and A' is provided with forward and rear reinforcing pieces 1 and 1', respectively, curved to fit the contour of said tubes and soldered or otherwise suitably secured thereto. Each of said tubes A and A' is 105 further provided with an obliquely upwardly and forwardly extending hollow post or 110 standard 2 bolted or otherwise suitably secured to said tubes on said rearward rein-

forcing pieces 1', and with a suitable standard 3 comprising an obliquely upwardly and rearwardly extending hollow post 4 and an obliquely upwardly and inwardly extending post 5 bolted or otherwise suitably secured to said tubes on said forward reinforcing pieces 1. Fitting at one end in, and extending obliquely upwardly and forwardly from, said posts 2 are short bars or rods 6, and likewise fitting at one end in, and extending obliquely upwardly and rearwardly from, said posts 4 are short bars or rods 7, these bars or rods 6 and 7 being adapted, as hereinafter appearing, to support the casing or housing containing the gearing for imparting motion to the propeller and its shaft. Fitting at one end in, and extending obliquely upwardly and inwardly from, said posts 5 are short bars or rods 8 adapted to brace the handle-bar-bracket, as hereinafter appearing. Extending transversely between said tubes and bolted or otherwise suitably secured thereto on said rearward reinforcing pieces 1' is a cross-bar or brace 9; and indicates a cross-strip or brace extending transversely between said tubes preferably near the stern thereof, said strip or brace 10 being preferably bolted or otherwise suitably secured to said tubes on reinforcing pieces 11 substantially similar to said reinforcing pieces 1 and 1'. These braces 9 and 10 are adapted to hold or maintain said tubes A and A' in proper relative position; and it will be obvious that additional cross-bars or braces might readily be employed or used if necessary or desired.

12 indicates a casing which houses the gearing for imparting motion to the propeller and its shaft, this casing comprising preferably two cylindrical sections 13 and 14 bolted or otherwise suitably secured together, as shown particularly in Fig. 5. Bolted or otherwise suitably secured to said casing 12 at a proper point relative to said posts 2, is a member 15 comprising oppositely-disposed obliquely downwardly and rearwardly extending hollow portions 16 in which the upper ends of said short bars or rods 6 are adapted to fit; and bolted or otherwise suitably secured to said casing 12 at a proper point relative to said posts 4, is a similar member 17 comprising oppositely-disposed obliquely downwardly and forwardly extending hollow portions 18 in which the upper ends of said short bars or rods 7 are adapted to fit, bars 6 and 7 being preferably of such a length that casing 12 will be supported thereby above and midway vertically between said tubes A and A' as shown particularly in Figs. 1 and 2. Each of said hollow portions 16 and 18 at its outer end, as shown particularly in Fig. 6, is preferably slit, as at 19, and provided with threaded ears 20 having a tightening-screw 21 cooperating therewith; said bars

6 and 7 may thus be more easily fitted into said hollow portions 16 and 18 and firmly and also adjustably held therein.

Bolted or otherwise suitably secured on the upper portion of casing 12 and extending preferably obliquely upwardly and rearwardly therefrom, as shown particularly in Figs. 1 and 6, is a suitable hollow standard or post 22, in which is adapted to fit a saddle-post 23 having a suitable saddle or seat 24 for the operator on its outer end. Standard or post 22 at its outer end, as shown particularly in Figs. 6 and 7, is also preferably split, as at 25, and provided with threaded ears 26 having a tightening-screw 27 cooperating therewith, whereby said saddle-post 23 and its saddle 24 may be firmly held in adjusted positions as required to accommodate the operator or user of the boat. Also bolted or otherwise suitably secured on the upper portion of casing 12 and extending preferably obliquely upwardly and forwardly therefrom, as shown particularly in Figs. 1 and 6, is a hollow standard or post 28, in which fits a short bar or rod 29. This post 28 is also at its outer end preferably slit and provided with threaded wings and a cooperating tightening-screw similar to said portions 16 and 18 and post 22. Fitting on the outer end of said rod or bar 29 is a member 30 comprising an obliquely downwardly and inwardly extending hollow portion 30^a in which said bar or rod 29 fits, a pair of oppositely-disposed obliquely downwardly and outwardly extending hollow portions 30^b in which the upper ends of said bars or rods 8 are adapted to fit, and a central hollow portion 30^c in which a suitable handle-post 31 provided with suitable laterally-extending handle-bars 32 is adapted to rotatably fit. Handle-post 31 extends downwardly to approximately the plane of said tubes A and A' and is provided at its lower end with a cross-piece or bar 31^a fixedly secured thereto. Pivotaly secured to the opposite ends of, and extending rearwardly from, said cross-bar 31^a, are rudder-operating-rods or cables 33 and 33'. Each of said casing-sections 13 and 14 is centrally provided with a circular preferably integral pocket 13' and 14', respectively, in each of which pockets is arranged a cup-shaped hardened bearing 34 for anti-friction rollers or balls 35. Journaled in said casing-sections and extending transversely through said pockets and casing is a suitable pedal-shaft 36, and arranged within said casing and feathered or otherwise fixedly secured to shaft 36, so as to rotate therewith, is a large gear-wheel 37. Arranged in each of said pockets 13' and 14' and fitting on said shaft 36 and secured thereon as by suitable nuts 38, is a suitable cone 39 providing a race therebetween and said hardened bearings 34 for said anti-friction rollers or balls

35, as clearly shown in Fig. 5. Fixedly secured on the ends of said shaft 36 are oppositely-disposed pedals 40. As said pedals 40 are rotatably driven or operated, said driving-gear-wheel 37 will be driven or rotated and, due to said balls or rollers 35, with very little friction. On its lower portion, said casing 12 is provided with an enlarged preferably integral portion 41 (shown particularly in Figs. 5, 6, and 8) projecting downwardly between said tubes A and A' and providing a housing for the gear-wheels for imparting or transmitting motion from said gear-wheel 37 to a suitable propeller shaft 42. This enlarged casing portion 41 is provided on opposite sides, as shown particularly in Figs. 6 and 8, with circular preferably integral pockets 43 similar to said pockets 13' and 14', in each of which pockets 43 is likewise arranged a hardened cup-shaped bearing 44 for anti-friction rollers or balls 45. Journaled in said enlarged casing portion 41 and extending therethrough and through said pockets 43 parallel with said shaft 36, is a shaft 46 on which is feathered or otherwise fixedly secured a spur-wheel or pinion 47 meshing with said gear-wheel 37. Arranged in each of said pockets 43 and fitting on said shaft 46 and secured thereon as by suitable nuts 48, is a suitable cone 49 providing a race therebetween and said hardened bearings 44 for said anti-friction rollers or balls 45, as clearly shown in Figs. 6 and 8. The open outer face of each of said pockets 43 is preferably closed by a suitable cap 50 threaded or otherwise suitably secured thereon.

Arranged within said enlarged casing portion 41 and feathered or otherwise fixedly secured on said shaft 46 to one side of said spur-wheel or pinion 47, is a bevel-gear 51, and interposed between said gear 51 and the side of said enlarged casing portion 41, as shown particularly in Figs. 5 and 8, is a thrust-bearing 52, for well understood purposes, this thrust-bearing preferably comprising a plurality of annular plates 52^a, a circular series of anti-friction balls or rollers 52^b arranged therebetween, and a suitable cage 52^c fitting around said balls or rollers to keep the same in place. A suitable spacing-collar 53 is preferably interposed on said shaft 46 between said spur-wheel or pinion 47 and the opposite side of said enlarged casing-portion 41. Said enlarged casing portion 41 is provided with an obliquely rearwardly and downwardly projecting substantially cup-shaped preferably integral portion 54 having rearwardly extending therefrom what might be called a collar 55, in which collar is arranged and fitted a tubular member 56 providing a bearing for one end of said propeller-shaft 42, as shown clearly in Figs. 6 and 8. Fixedly

secured to the upper end of said propeller-shaft and arranged within said enlarged casing-portion 41 and its rearwardly-extending cup-shaped portion 54, as shown particularly in Fig. 8, is a substantially conical bevel-gear 57 meshing with said bevel-gear 51, whereby, as will be seen, rotary motion imparted to said gear-wheel 37 by said pedals 40 will be transmitted through the gear-wheels described to said propeller-shaft and said propeller-shaft be thereby driven. This propeller-shaft 42 extends obliquely downwardly and rearwardly between said tubes A and A', as shown in Figs. 1 and 2, and has fixedly secured on its outer end any suitable propeller 58, preferably a screw-propeller. As shown particularly in Fig. 1, a suitable propeller-strut or bracket 59 secured at its upper end to said cross-strip 10 provides a bearing or journal for the outer end of said propeller-shaft. Preferably arranged in said cup-shaped portion 54 of enlarged casing-portion 41 is a cup-shaped hardened bearing 60, similar to said cup-shaped bearings 34 and 44, for suitable antifriction rollers or balls 61 interposed therebetween and said conical bevel-gear 57, as shown particularly in Figs. 6 and 8, whereby said propeller-shaft 42 is rotatable with little friction. Pivoted on the upper face of said cross-strip 10 centrally between said tubes A and A' is a suitable bell-crank lever 62 having laterally-extending arms 62^a to the outer ends of which said rods or cables 33 and 33' are pivotally connected, as shown particularly in Fig. 2, and a rearwardly-extending arm 62^b to the outer end of which are pivotally connected oppositely-disposed rods 63. Preferably arranged at or in the stern of each of said tubes A and A' is a vertical tubular bearing 64, in each of which bearings 64 is journaled a rudder-post 65, the lower ends of said rudder-posts extending preferably below the water-line, as shown in Fig. 1, and being there provided with suitable rudders 66. Fixedly secured to the upper end of each of said rudder-posts 65 is a short arm 67, the inner ends of said arms 67 being pivotally connected to the outer ends of said oppositely-disposed rods 63. Thus, it will be seen that as said handle-bars 32 are turned to the right or left, said rudders 66 will be likewise, through the connections or means described, turned to the right or left and boat accordingly guided or steered as desired.

While the casing 12 and its several parts may be made of any suitable material as desired, I prefer to construct the same of macadamite, which is strong, light, and durable, and I have found that my boat may be used with safety, is easily operable, and is capable of considerable speed with a comparatively small outlay of foot-power. It

will be obvious that the movable parts may be maintained in a well-lubricated condition in any desired manner, and it is to be understood that changes in the arrangement, construction, and combination of the several

5 parts of my boat may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

10 In Figs. 9 and 10, I have shown a modified form of my boat, the propeller-shaft 42 and its propeller 58 being driven by a motor instead of by foot-power, as hereinbefore described. In this form, the casing 12 and its

15 several parts is done away with, the tubes A and A' having arranged thereupon and secured thereto a suitable platform 68, upon which is mounted a suitable seat 69 for the operator. The forward ends of said rudder-

20 operating-rods or cables 33 and 33' are here pivotally connected to a suitable cross-piece 70 fixedly secured to the lower end of a suitable steering-wheel post or tube 71 rotatably mounted or journaled in a bearing 72 and

25 extending obliquely upwardly and rearwardly in proper position relative to said seat 69, a suitable steering-wheel 73 being arranged upon its upper end. The forward end of said propeller-shaft 42 is also here

30 connected in any suitable manner to, and driven or rotated by, a suitable motor 74 mounted preferably upon a cross-strip 75 also in proper position relative to said seat 69. The several other parts of my boat in

35 this form as a motor-boat being the same as those hereinbefore described, further description thereof is deemed unnecessary.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

40 1. The combination with a boat comprising a pair of elongated substantially tubular body-members connected together in parallel relation with a space therebetween,

45 of propelling mechanism therefor comprising an enlarged gear-casing, a plurality of gear-casing supporting-members rigidly mounted at one end on, and extending diagonally upwardly and inwardly from, each

50 of said body-members and rigidly secured at their other end to said gear-casing, said gear-casing being supported directly and only by said members substantially midway

55 between said body-members, a rotatable propeller-shaft supported at one end by, and extending rearwardly between said body-members from, said gear-casing, and pedal-operated gearing in said casing adapted to rotate said shaft; substantially as described.

60 2. The combination with a boat comprising a pair of elongated substantially tubular body-members connected together in parallel relation with a space therebetween, of propelling mechanism therefor comprising an

65 enlarged gear-casing, a plurality of gear-

casing supporting-members rigidly mounted at one end on, and extending diagonally upwardly and inwardly from, each of said body-members and rigidly secured at their other end to said gear-casing, said gear-casing being supported directly and only

70 by said members substantially midway between said body-members, a tubular shaft-supporting-member supported by said gear-casing, a rotatable propeller shaft supported at one end by, and extending rearwardly between said body-members from, said tubular

75 shaft-supporting member, a bearing on said body-members adapted to rotatably support the other end of said shaft, pedal-operated gearing in said casing adapted to rotate said shaft, and anti-friction bearings in said casing for said gearing and said shaft; substantially as described.

3. The combination with a boat comprising a plurality of substantially tubular

85 body-members connected together in parallel relation with a space therebetween and steering mechanism for said body-members, of a plurality of diagonal members mounted

90 on said body-members and extending upwardly and inwardly therefrom, a sectional gear-casing provided with an enlarged downwardly-projecting portion supported only by said diagonal members substantially

95 midway between said body-members, a tubular member supported by said downwardly-projecting portion of said casing, a rotatable propeller-shaft supported at one end by, and extending rearwardly from, said

100 tubular member between said body-members, a bearing on said body-members adapted to rotatably support the other end of said propeller-shaft, a pedal-operated-shaft journaled in said casing, a gear-wheel fixedly

105 mounted on said shaft within said casing, a second shaft journaled in said downwardly-projecting portion of said casing, a pinion fixedly mounted on said second shaft and meshing with said gear-wheel, meshing

110 bevel-gears mounted on said second and propeller-shafts, and anti-friction bearings in said casing for said shafts; substantially as described.

4. A boat comprising a pair of elongated

115 substantially tubular body-members rigidly connected together in parallel relation with a space therebetween, an enlarged sectional gear-casing, a plurality of gear-casing supporting-members rigidly mounted at one end

120 on, and extending diagonally upwardly and inwardly from, each of said body-members and rigidly secured at their other end to said gear-casing, said gear-casing being supported directly and only by said supporting-

125 members substantially midway between said body-members, a tubular shaft-supporting member supported by said gear-casing, a rotatable propeller-shaft supported at one end by, and extending rearwardly between said

130

body-members from, said shaft-supporting-
members, a bearing on said body-members
adapted to rotatably support the other end
of said propeller-shaft, pedal-operated gear-
5 ing in said casing adapted to rotate said
shaft, a saddle-post mounted directly upon,
and supported only by, said gear-casing,
steering-post supporting-members mounted
on said gear-casing and on said body-mem-
10 bers, a steering-post supported by said
steering-post supporting-members in oper-
ative position relatively to said saddle-post,

a plurality of rudders on said body-mem-
bers, and operating-connections between said
steering-post and each of said rudders; sub- 15
stantially as described.

In testimony whereof, I have signed my
name to this specification, in the presence of
two subscribing witnesses.

EDWARD C. CLOSTERMEYER.

Witnesses:

RUTH PETERSON,
GEORGE C. EICHBAUM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
