June 12, 1951 I. E. REED 2,556,340

PENDULUM DRIVEN HYDRAULIC MOTOR BOAT PROPULSION

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FIG. 1.

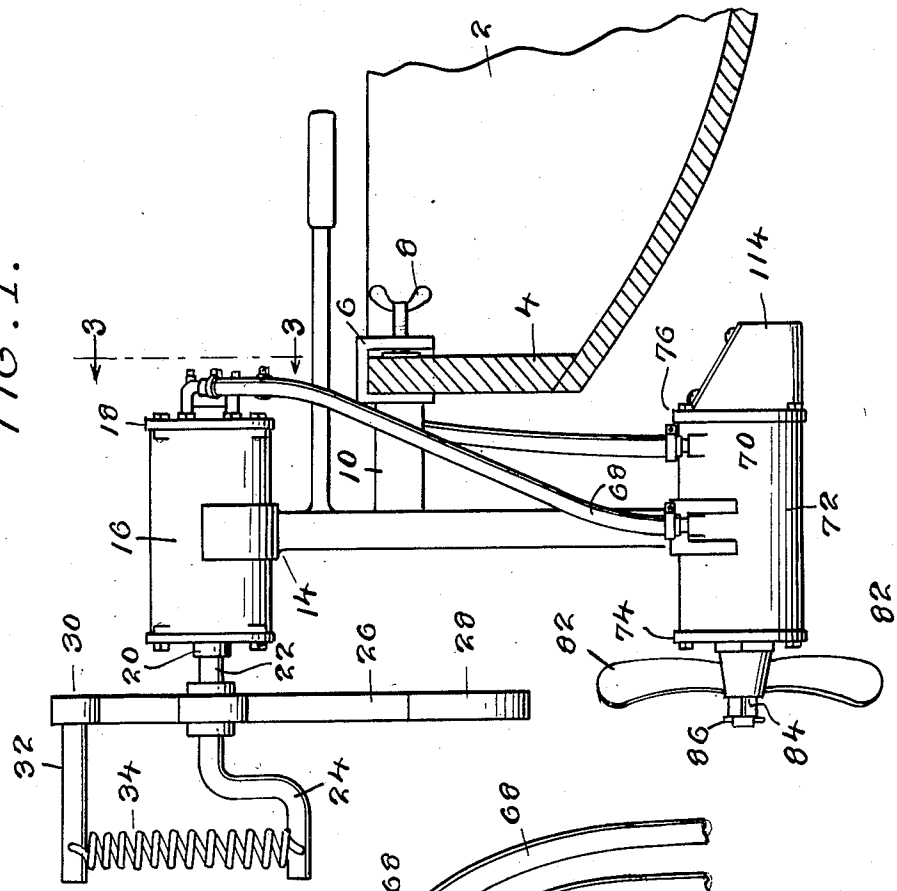

FIG. 3.

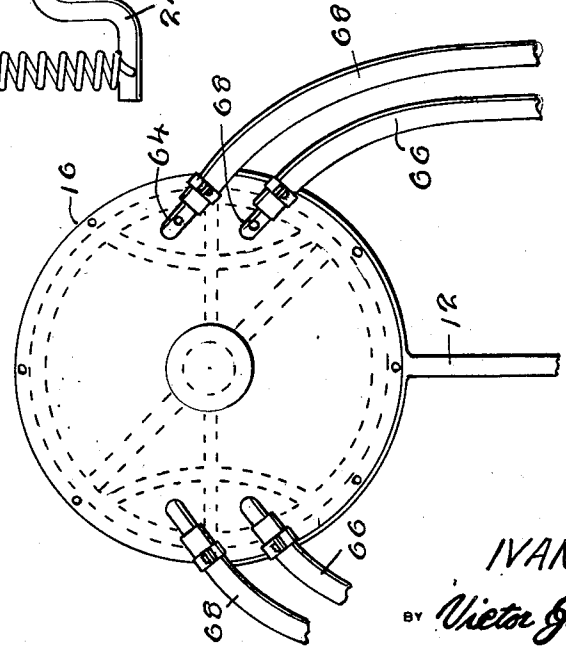

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FIG. 2.

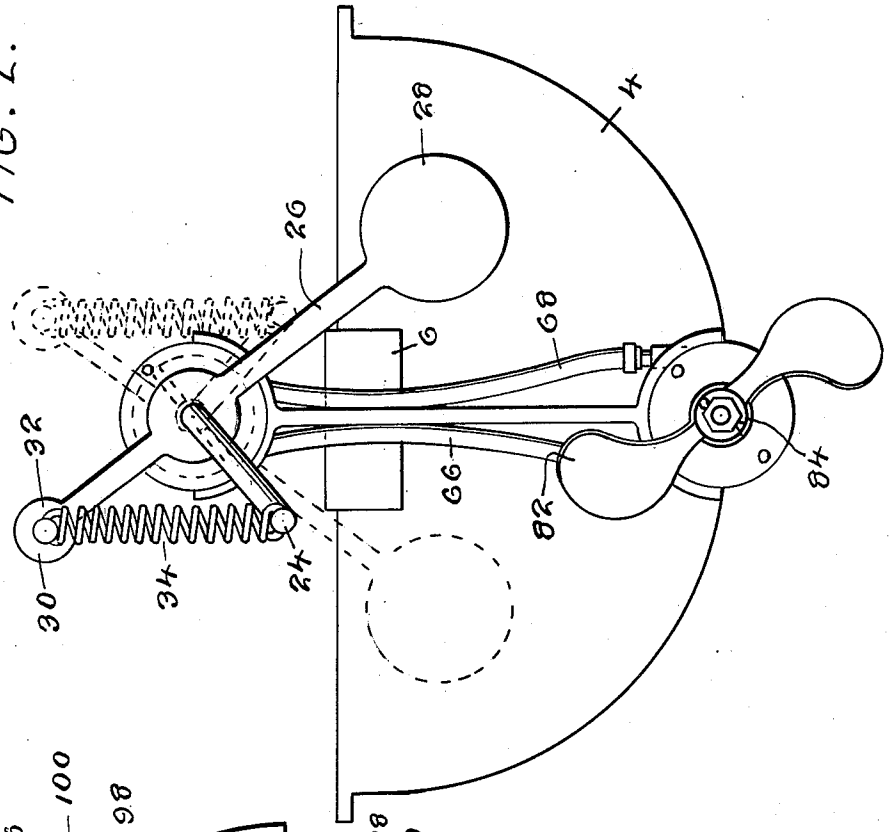

FIG. 7.

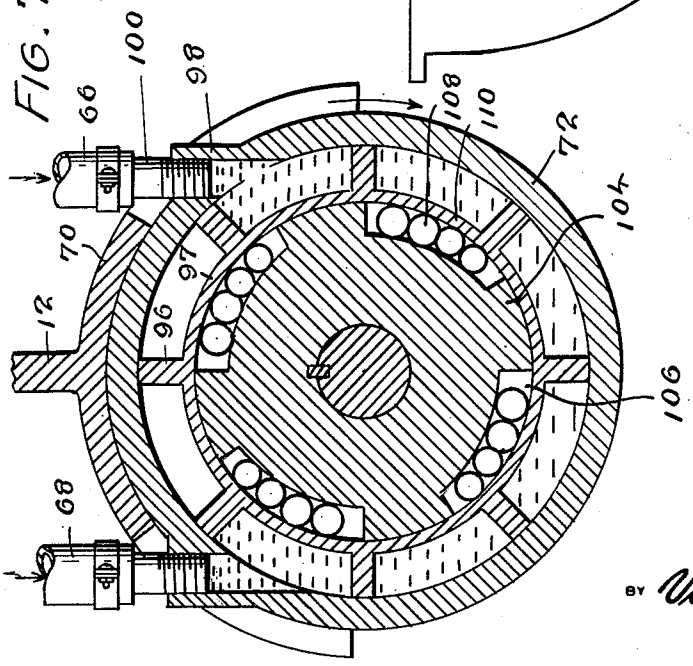

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FIG. 5.

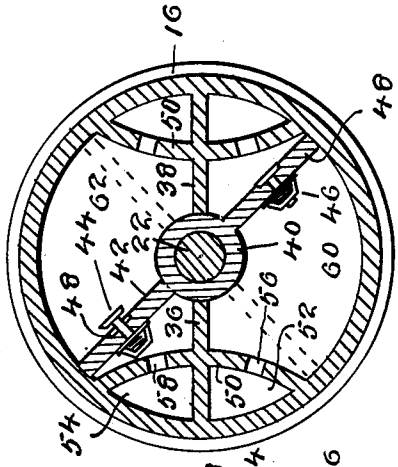


FIG. 4.

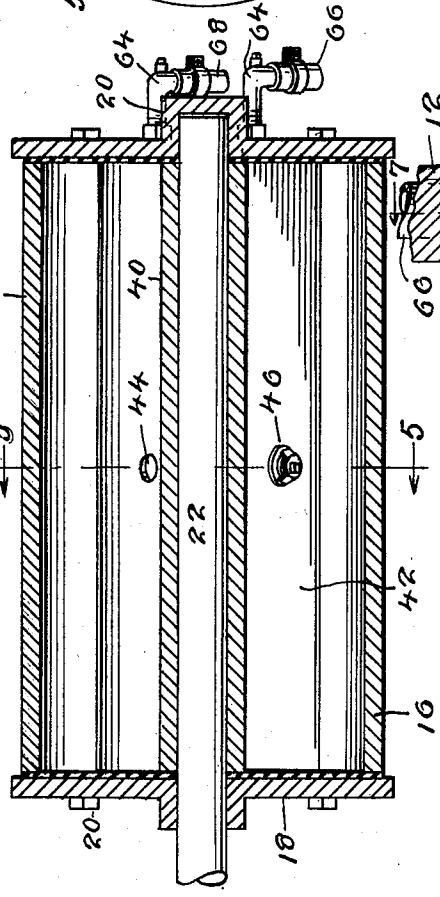
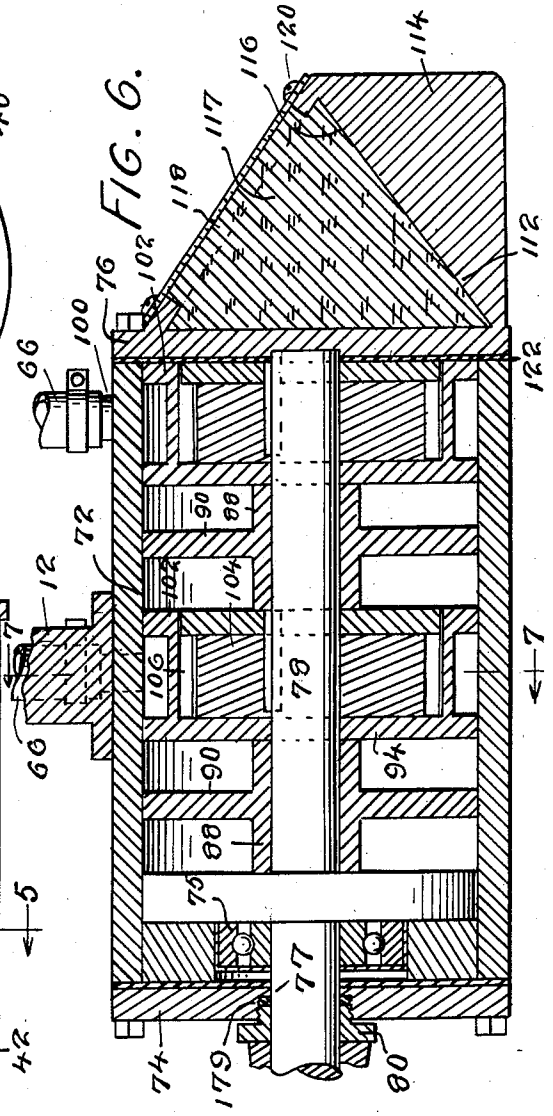


FIG. 6.



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Patented June 12, 1951 2,556,340

UNITED STATES PATENT OFFICE

2,556,340

PENDULUM DRIVEN HYDRAULIC MOTOR-BOAT PROPULSION

Ivan E. Reed, Drift, Ky.

Application January 18, 1949, Serial No. 71,507

1 Claim. (Cl. 115—5)

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My present invention relates to an improved pendulum driven hydraulic motor boat propulsion of the type especially adapted for use in small boats wherein the motor may be attached to the stern board of the boat to actuate a fluid motor and a propeller thereon.

The pendulum is swung by the motion of the boat upon the water which will rock the boat except when the water is dead calm.

The pendulum driven motor includes a crank shaft which is oscillated to oscillate an opposed blade compressor in the motor which from alternate chambers forces the fluid to the hydraulic motor to rotate the rotor and the shaft and propeller operably attached thereto.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention according to the best mode I have thus far devised, but it will be understood that various changes and alterations may be made in the exemplified structure within the scope of the appended claim.

In the drawings:

Fig. 1 is a side elevational view of the assembled pump and motor.

Fig. 2 is a rear elevational v'ew

Fig. 3 is a front view of the pump at line 3—3 of Fig. 1.

Fig. 4 is a longitudinal sectional view through the pump.

Fig. 5 is a transverse sectional view of the pump at line 5—5 of Fig. 4.

Fig. 6 is a longitudinal sectional view of the motor.

Fig. 7 is a transverse sectional view of the motor at line 7—7 of Fig. 6.

Referring now to the drawings wherein I have

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valves 44 pressed by springs 46 into seats 48 and these vanes of course reciprocate as the shaft and sleeve oscillates.

Arcuate plates 50 bisect the plates 36 and 38 and form chambers 52 and 54 communicating through holes 56 and 58 with the central chambers 60 and 62 in which the vanes reciprocate.

Each of the four chambers, 52 and 54, has an elbow 64 and 68 providing for the outflow and return of fluid, such as oil, therein.

On the lower end of post 12 in bracket 70, I secure a cylinder housing 72 having end plates 74 and 76 in which is journaled at 77 the shaft 78 secured rearwardly by packing collar 80 and a propeller 82 is secured on the shaft 78 by nut 84 and cotter pin 86.

Sleeve bearings 88 have disks 90 centrally aligning the bearings for the shaft 78 and alternating with the sleeve bearings and disks I employ two fluid transmission assemblies including the free rotors 94 having radial vanes 96 on ring 97 and the hose sections from the motor are connected in bosses 98 by nipples 100 to admit and discharge oil under pressure. The vanes and ring have a peripheral flange 102 forming a central chamber and in this chamber I use a disk 104 keyed to shaft 78 and formed with recesses 106 having eccentric inner walls 108 so that balls 110 in the recesses between the ring 97 and the walls 108 so that the rotor will drive the disk and shaft in one direction only.

Forwardly of the housing 72 I provide a housing extension 112 having a rudder plate 114 and a chamber 116 filled with a buoyant material 117 such as cork. A plate 118 secured by bolts 120 retains the material in position.

Suitable gaskets 122 are employed to render

late with rocking motion of the boat, a toggle acting spring connecting the pendulum to the blade, a fluid motor housing carried by the bracket, a propeller carried by the fluid motor housing and positioned to be immersed in water in which the boat is positioned, means connecting the horizontally disposed cylinder to the fluid motor housing whereby fluid under pressure provided by the blade in the horizontally disposed cylinder actuates the fluid motor and propeller.

IVAN E. REED

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