

R. E. SHARP.

ROLLER BOAT.

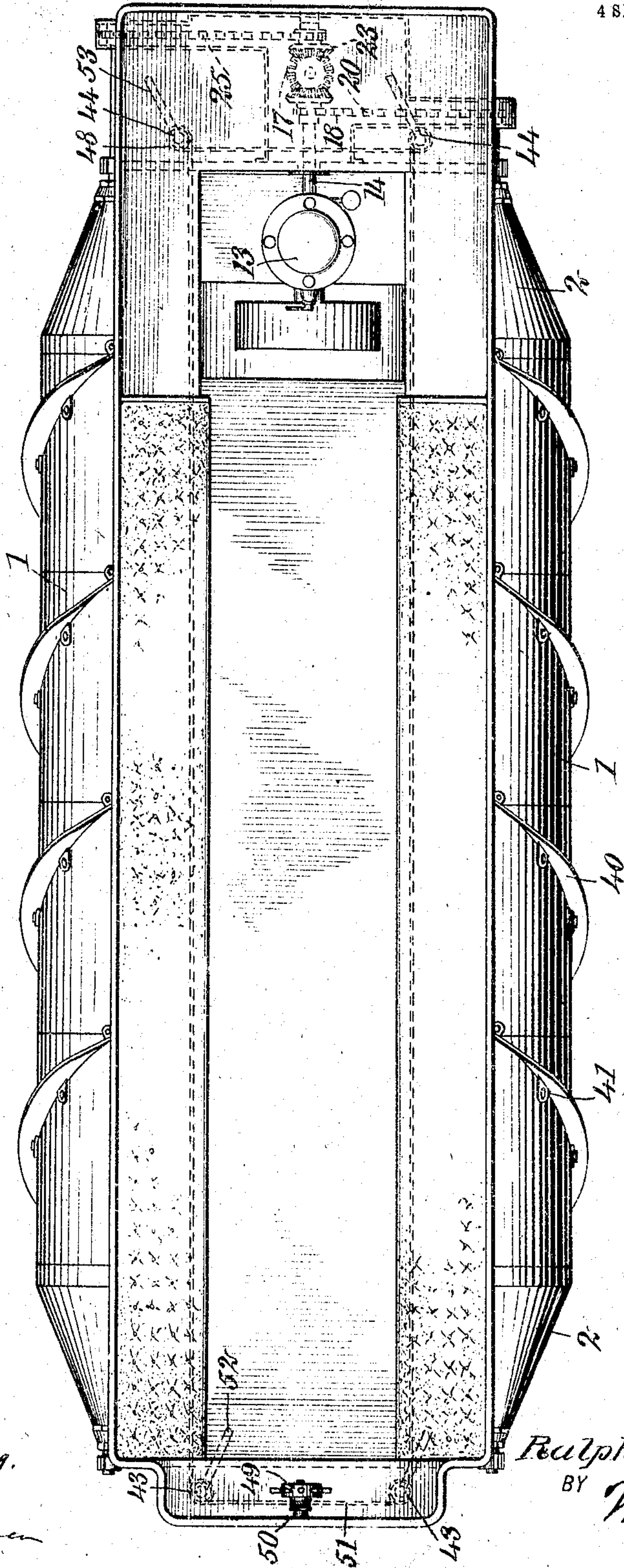
APPLICATION FILED OCT. 9, 1908.

919.782.

Patented Apr. 27, 1909.

4 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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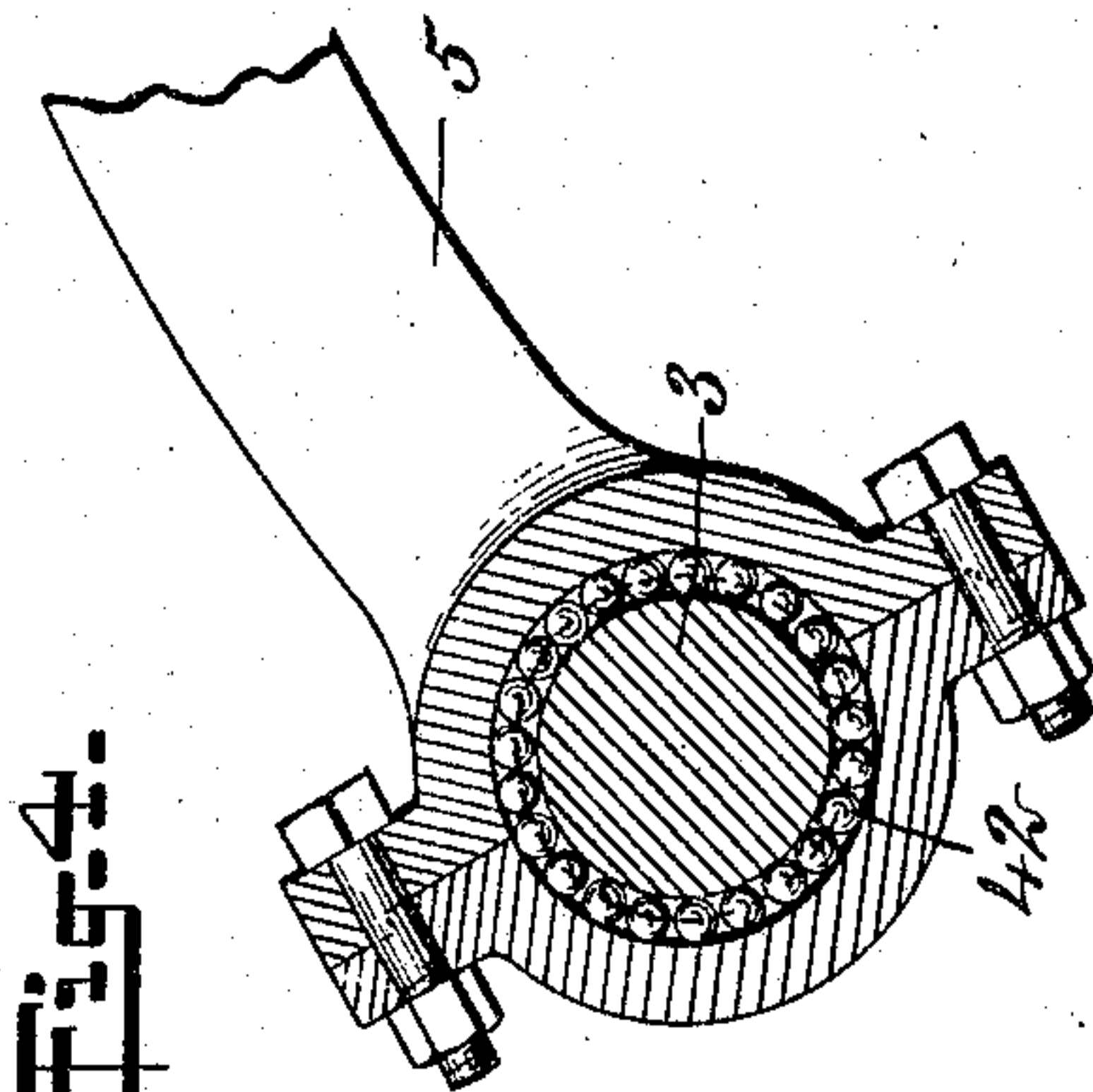
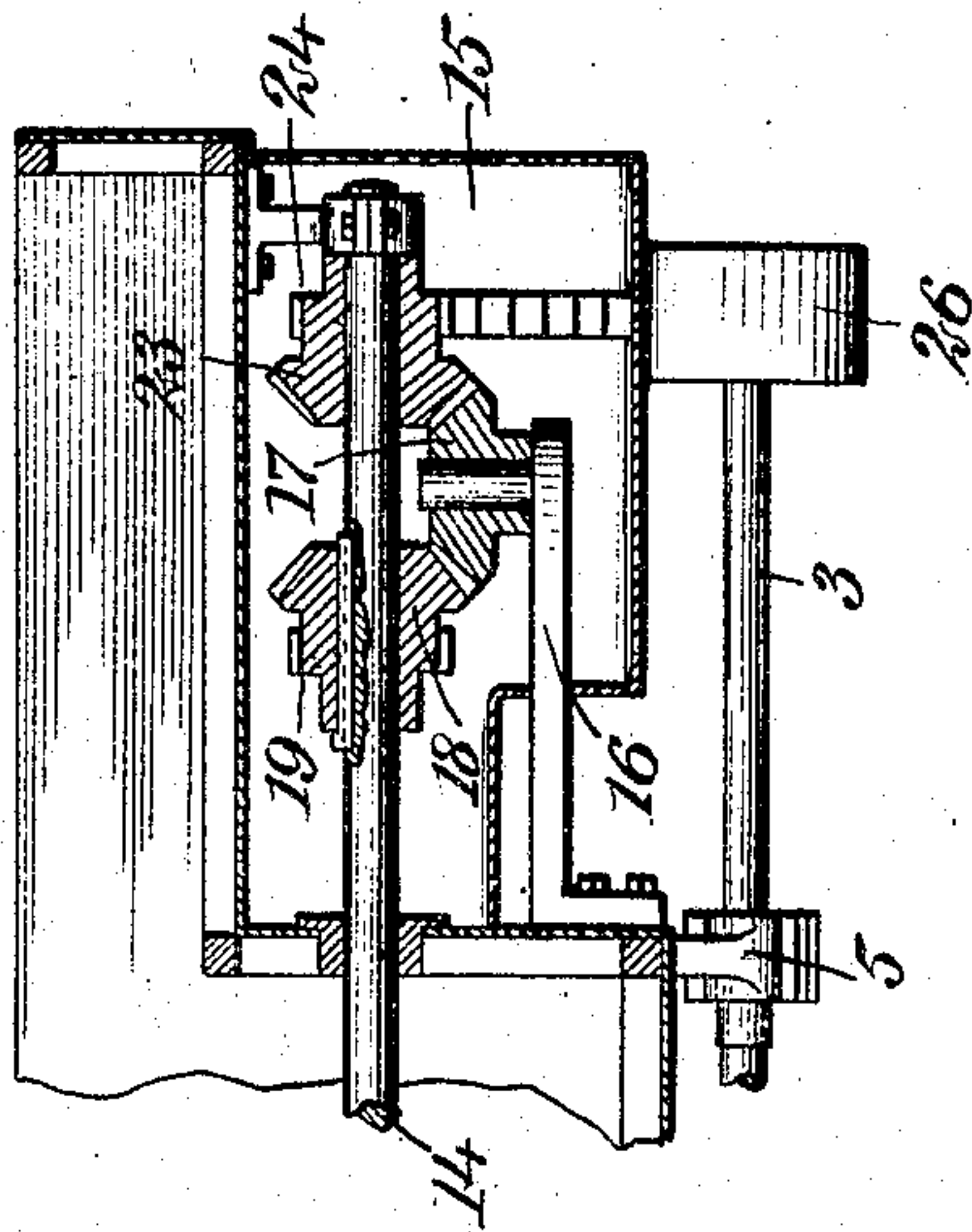
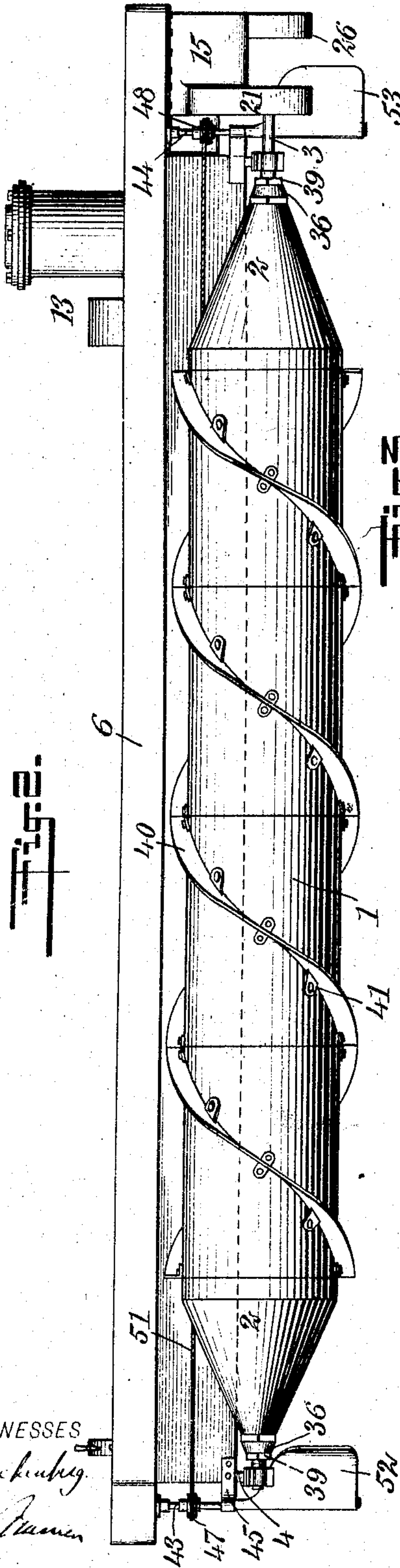
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4 SHEETS—SHEET 2.



WITNESSES

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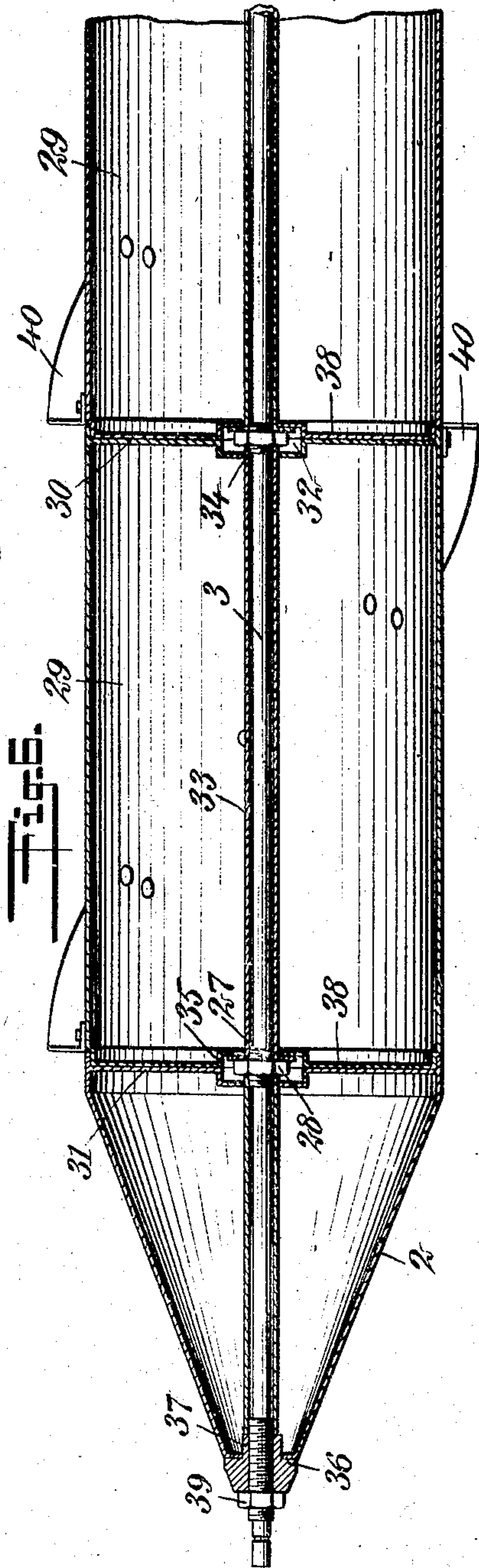
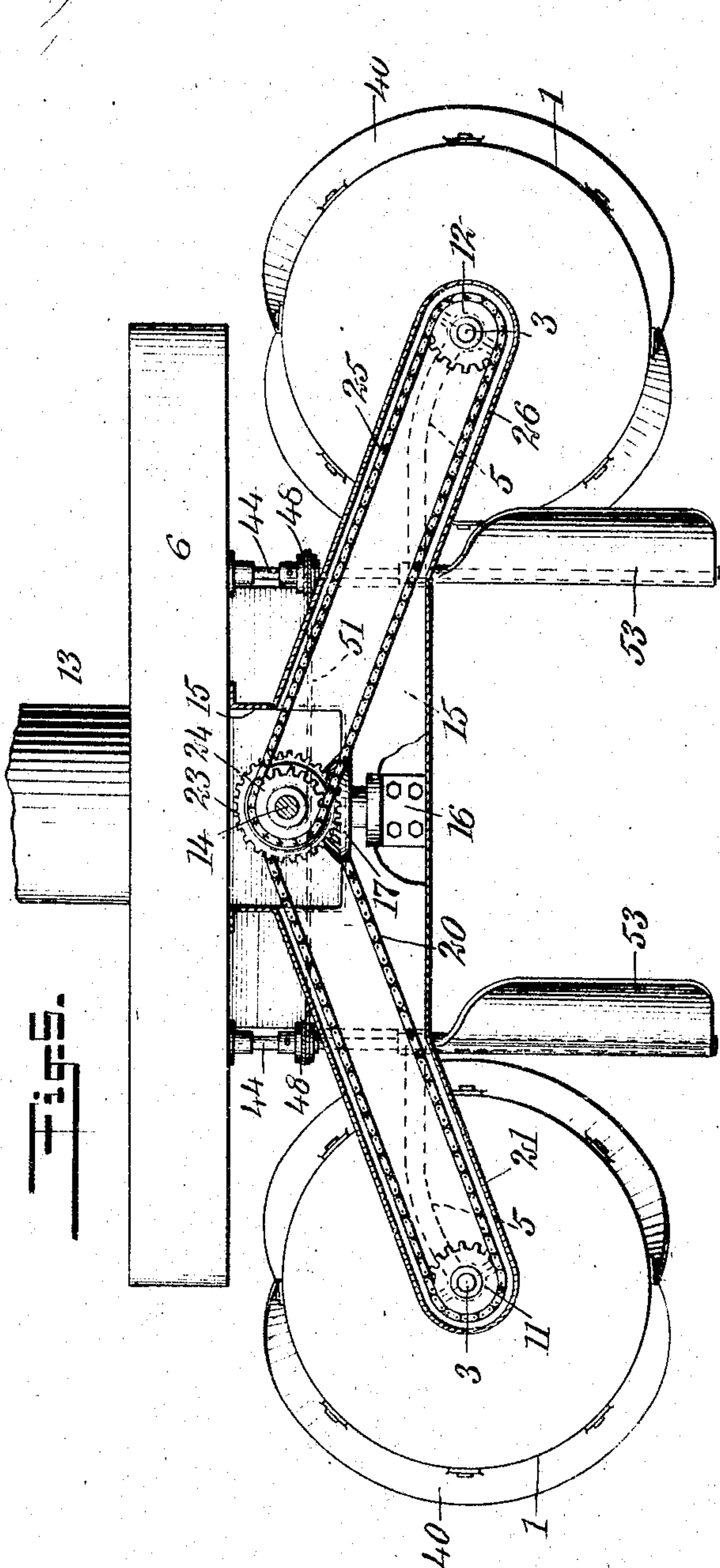
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4 SHEETS—SHEET 3.



WITNESSES

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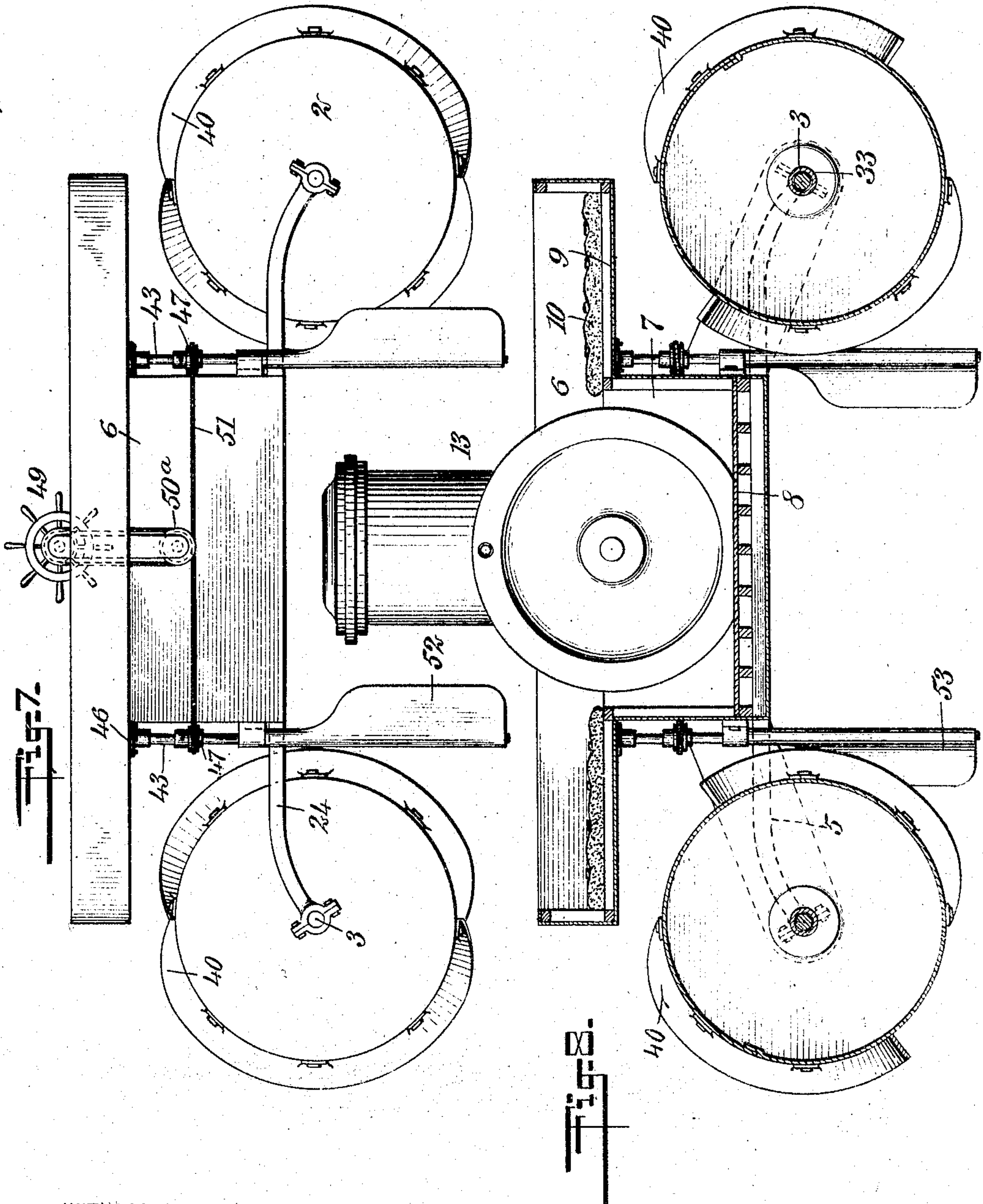
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 4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

RALPH EVERIT SHARP, OF NEWAYGO, MICHIGAN.

ROLLER-BOAT.

No. 919,782.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed October 9, 1908. Serial No. 456,851.

To all whom it may concern:

Be it known that I, RALPH EVERIT SHARP, a citizen of the United States, and a resident of Newaygo, in the county of Newaygo and State of Michigan, have invented a new and Improved Roller-Boat, of which the following is a full, clear, and exact description.

This invention relates to small pleasure boats or launches, and the object of the invention is to produce a boat having a simple construction which will be economical to build, and having improved propelling mechanism and improved steering gear.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan of a boat constructed according to my invention; Fig. 2 is a side elevation of the boat; Fig. 3 is a vertical section taken through the stern of the boat and illustrating the construction of the transmission gear for driving the propellers; Fig. 4 is a section through one of the end bearings for the propellers; Fig. 5 is a vertical section taken at the stern of the boat and showing the construction and arrangement of the gear case; Fig. 6 is a longitudinal section through the forward portion of one of the propellers; Fig. 7 is a front elevation of the boat; and Fig. 8 is a cross section through the boat and looking toward the stern.

Referring more particularly to the parts, 1, 1, represent the propellers of the boat, and these are in the form of hollow cylinders having cone-shaped heads 2, from which extend shafts 3 which are rotatably mounted at the forward end of the boat in the ends of the forward frame 4, and at the rear of the boat these shafts are rotatably mounted in the ends of the stern frame 5. The stern frame 5 is in the form of an arched truss which extends transversely of the boat, the ends of the truss being slightly depressed, as indicated. On these frames 4 and 5, the main frame or body 6 of the boat is supported. The body of the boat is formed centrally into a pit 7 having a sunken deck 8.

At the sides of this pit 7, the boat is built with an overhang or seat deck 9 which pro-

jects at each side of the boat, as shown. This seat deck 9 is provided with cushions 10 upon which passengers may sit facing inwardly. The shafts 3 of the boat, at the rear are provided with sprocket wheels 11 and 12 respectively, as indicated in Fig. 5.

In the rear portion of the boat, an engine 13 is mounted, the shaft 14 of which extends rearwardly into a gear case 15, as indicated most clearly in Fig. 3. Within this gear case a bracket 16 is provided, on which there is rotatably mounted an idle bevel gear wheel 17. On the shaft 14 a bevel gear wheel 18 is provided which meshes with the bevel gear 17, as shown. This bevel gear 18 is formed with a sprocket wheel 19 which is in alignment with the aforesaid sprocket wheel 11, and is connected therewith by a sprocket chain 20, as indicated in Fig. 5. The sprocket wheel 11 and the sprocket chain 20 are completely inclosed in a trunk or extension 21 which extends downwardly from the gear case 15. On the shaft 14, a bevel gear wheel 23 is rotatably mounted, and this bevel gear wheel meshes with the bevel gear wheel 17. The hub of this bevel gear wheel 23 is formed with a sprocket wheel 24 which receives a sprocket chain 25, and this sprocket chain runs over the sprocket wheel 12 at the right-hand side of the boat. This arrangement is very clearly indicated in Fig. 1. The gear case 15 is provided with a trunk or extension 26 which completely incloses the chain 25, and the gear wheel 12.

The propellers 1 constitute floats and give the boat buoyancy. The manner in which these propellers are constructed is clearly illustrated in Fig. 6. The shafts 3 are provided at intervals along the length thereof with upset necks 27 which are threaded so as to receive clamping nuts 28 respectively. Between these clamping nuts, the propeller sections 29 are secured in place. These sections are of cylindrical form, as shown. Each section has a depressed head 30 and a projecting head 31, so that when the sections come together they interlock with each other, as indicated. At the points where the nuts 28 are located, the heads are recessed so as to form pockets 32, as shown. Between the heads, through the center of each section, a tubular shaft or inner sleeve 33 runs. These sleeves extend through openings 34 formed centrally in the heads. At one end each sleeve is provided with an integral col-

lar 35 which seats against the adjacent head in the recess which is formed for the nut. The conical heads 2 of the floats are provided with tips 36 which form the ends or points of the cones and these are threaded so as to screw upon threaded necks 37 formed upon the ends of the shafts. In forming the propellers or blades, they will be built up from one end and clamped together, as will be readily understood so as to form continuous water-tight cylinders having water-tight bulkheads 38 formed by the abutting heads 31. Beyond the cone tips 36, clamping nuts 39 are provided which seat upon the tips 36 and act as check nuts to prevent any possibility of the sections becoming loose. On the outer sides of the propellers or cylinders 1, propeller blades 40 are provided. These blades are simply in the form of helical fins which are removably attached to the propellers by suitable fastening devices 41.

In order to reduce the friction at the bearings for the shafts 3, I provide the bearings with balls 42 which run in suitable races, as indicated in Fig. 4.

Referring now to the steering mechanism, as indicated in Fig. 1, near the four corners of the body of the boat, rudder posts 43 and 44 are provided, the rudder posts 44 being disposed at the stern, and the rudder posts 43 at the bow. These rudder posts are suitably mounted in bracket bearings 45 below and are suitably mounted in bearings 46 on the under side of the overhang of the boat body. The rudder posts 43 are provided with sheaves 47, and the rudder posts 44 with similar sheaves 48. In the bow of the boat, and centrally disposed, a steering wheel 49 is provided, having a drum 50 around which an endless steering cord or cable passes. This steering cable passes around guide sheaves 50^a as indicated in Fig. 7, and then around the sheaves 47 of the forward rudders 52 in the manner indicated, and passes around the sheaves 48 on the rear rudder posts in an opposite direction, as indicated. The arrangement is such that the rudder posts on the right have the cable passed around them in opposite directions so that the movement of the forward rudder 52 toward the left will be simultaneous with the movement of the rear rudder 53 toward the right, and vice versa. The two rudders 52 at the bow are parallel, and the two rudders 53 at the stern are parallel with each other. When the boat is advancing in a straight course, all the rudders are parallel. If the boat is to be steered to the starboard, the wheel 49 will be rotated to starboard, which will throw the rudders 52 to port, and the rudders 53 to starboard. The forward rudders will evidently have the effect of turning the bow of the boat toward starboard, while the stern rudders will tend to turn the stern toward the port side. In this

way the boat is made to turn very rapidly, and is very sensitive to the action of the rudders.

Referring again to the driving mechanism for the propellers, attention is called to the fact that the bevel gear wheel 23 will rotate in an opposite direction from the bevel gear wheel 18. From this arrangement it follows that the propeller on one side of the boat will rotate in an opposite direction from the propeller on the opposite side. This is an advantageous arrangement as it tends to prevent the boat from turning to move out of a straight course. It, of course necessitates the use of propeller blades of opposite character on the opposite sides, as indicated in Fig. 1.

In case the wall of either float should become punctured, the bulkheads 38 operate to confine the water to the section of the float where the puncture is located. On account of the upset or enlarged diameter of the necks 27 the nuts 28 can be readily slipped into place over the unthreaded extensions of the shafts.

Having thus described my invention, I claim as new and desire to secure by Letters Patent,—

1. A boat having a pair of propellers on opposite sides thereof, a body disposed therebetween, a driving shaft adapted to be driven by a motor and disposed centrally in said body, a bevel gear wheel rigid with said shaft, a loose bevel gear wheel mounted on said shaft, said bevel gear wheels having sprocket wheels formed thereupon, sprocket chains running over said sprocket wheels respectively and affording means for driving said propellers, a bracket attached to said body and projecting rearwardly under said bevel gear wheels, and an idle bevel gear wheel mounted over said bracket and meshing with said first bevel gear wheel.

2. A float propeller for a boat of the class described, having a cylindrical body formed of cylindrical sections, said cylindrical sections having interlocking ends, a shaft extending continuously through said cylinder sections, having upset necks adjacent said heads, and clamping nuts on said necks for clamping said sections together.

3. A boat having a pair of starboard rudders disposed respectively at the bow and stern thereof and having a pair of port rudders disposed respectively at the bow and stern thereof, and an endless steering cable connecting said rudders and adapted to move the bow rudders in unison and substantially parallel with each other, said steering cable being adapted to move the stern rudders in an opposite direction to the bow rudders and substantially parallel with each other.

4. A boat of the class described, having a pair of float prancell.

therebetween, means for driving said float
propellers in opposite directions, a pair of
starboard rudders disposed respectively at
the bow and stern, a pair of port rudders
5 disposed respectively at the bow and stern,
and an endless steering cable connecting
said rudders and affording means for oper-
ating the same in unison, the bow rudders
being arranged parallel with each other and
10 the stern rudders being arranged parallel
with each other, said cable being attached to

the stern rudders in an opposite manner
from its attachment to the bow rudders
whereby the rudders at the stern move op-
positely to the bow rudders.

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

RALPH EVERIT SHARP.

Witnesses:

MAUDE E. PHILLIPS,
CHAS. E. PHILLIPS.