

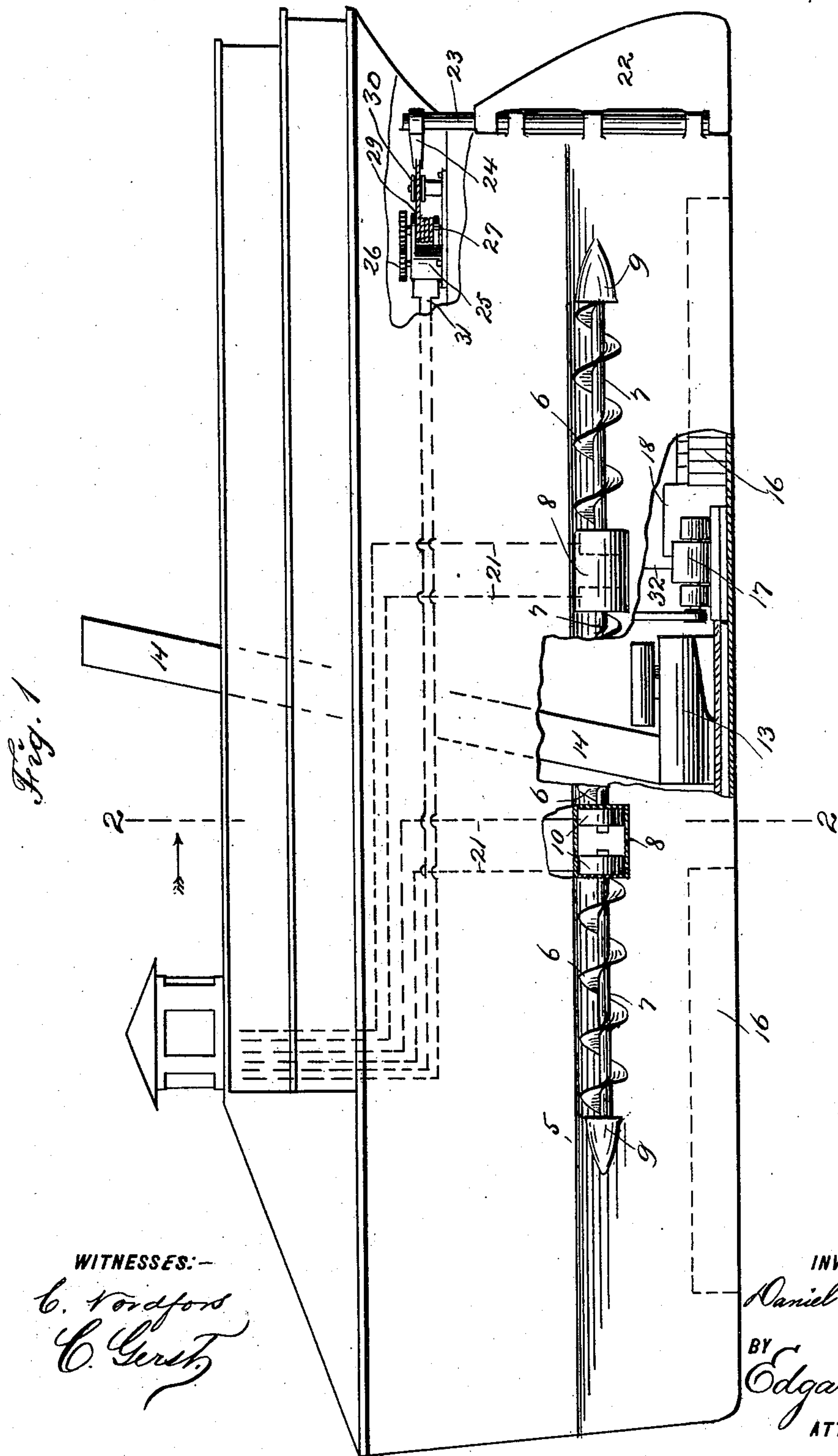
(No Model.)

2 Sheets—Sheet 1.

D. O'FLAHERTY.
ELECTRICALLY PROPELLED VESSEL.

No. 599,862.

Patented Mar. 1, 1898.



WITNESSES:—

C. Vondra
C. Gerst

INVENTOR

Daniel O'Flaherty
BY
Edgar Tate & Co.
ATTORNEYS,

(No Model.)

2 Sheets—Sheet 2.

D. O'FLAHERTY.
ELECTRICALLY PROPELLED VESSEL.

No. 599,862.

Patented Mar. 1, 1898.

Fig. 2

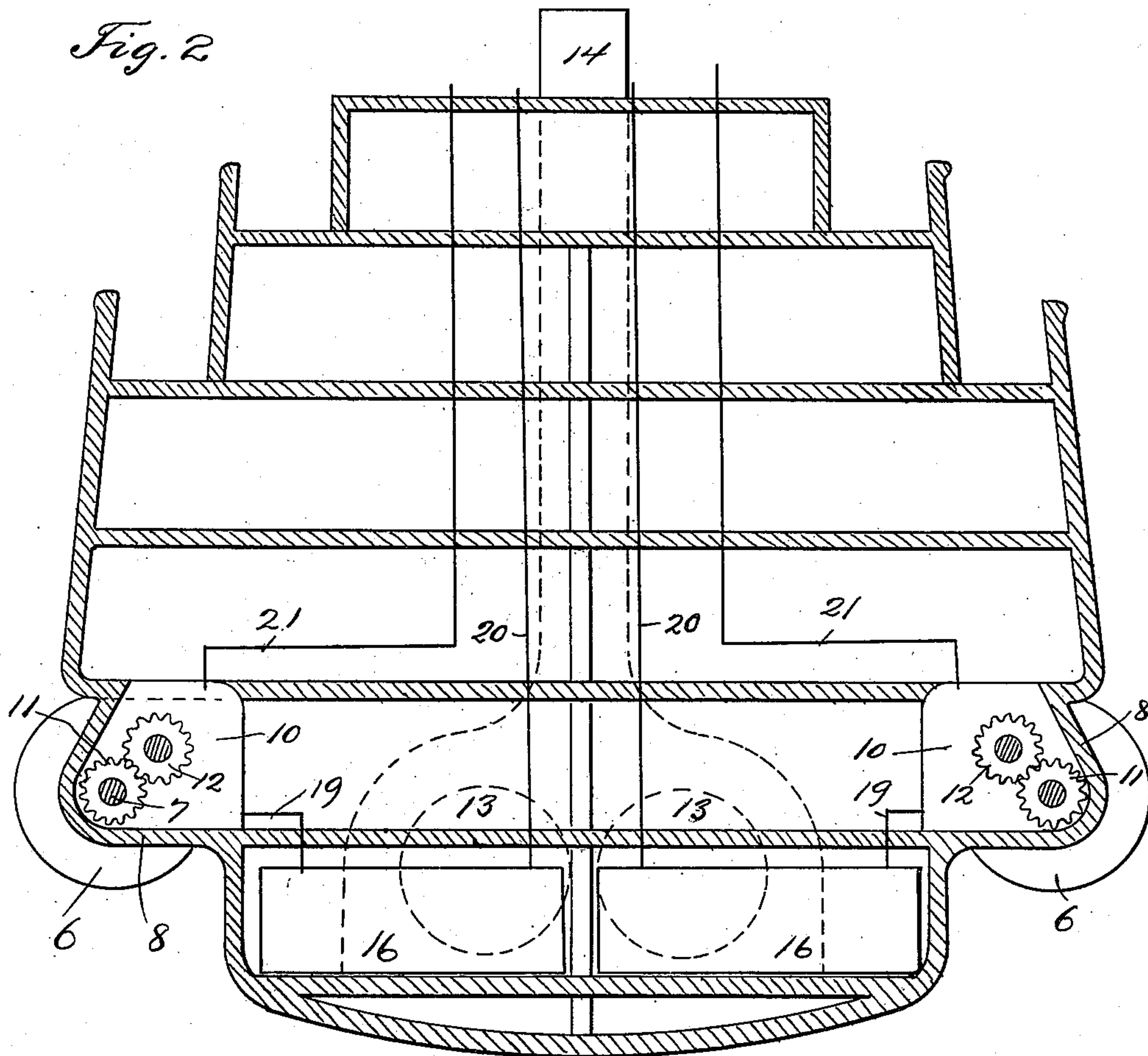
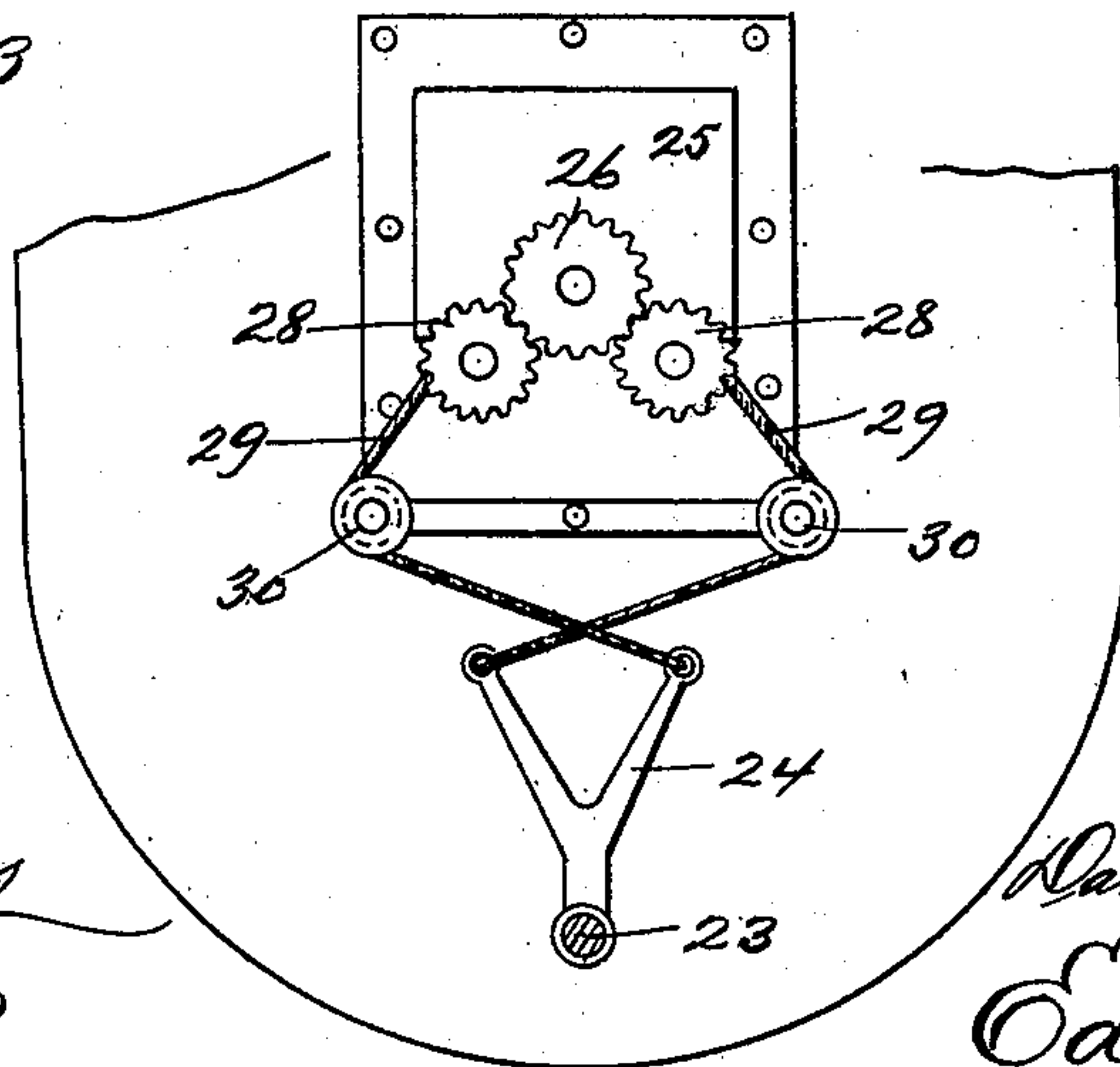


Fig. 3



WITNESSES:—

C. Vorafors
C. Gersp.

INVENTOR

Daniel O'Flaherty
BY
Edgar Tate & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

DANIEL O'FLAHERTY, OF KANSAS CITY, MISSOURI.

ELECTRICALLY-PROPELLED VESSEL.

SPECIFICATION forming part of Letters Patent No. 599,862, dated March 1, 1898.

Application filed May 12, 1897. Serial No. 636,159. (No model.)

To all whom it may concern:

Be it known that I, DANIEL O'FLAHERTY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Electrically-Propelled Vessels, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to electrically-propelled vessels; and the object thereof is to provide a vessel of this class which is provided with improved propelling devices which are operated entirely by electricity and in which the steering or guiding mechanism is also electrically controlled.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a side view of a vessel made according to my invention, part of the hull of the vessel being broken away to better show the interior construction; Fig. 2, a section on the line 2 2 of Fig. 1, and Fig. 3 a plan view of the steering mechanism.

In the drawings forming part of this specification the separate parts of my improvement are designated by the same numerals of reference in each of the views, and in the practice of my invention I provide a vessel the hull of which is provided at each side with longitudinal concavities 5, which are so situated as to be below the water-line and in which are mounted propeller-screws 6, three of which are used on each side of the vessel, as shown in the drawings, but any desired number of which may be employed.

The propeller-screws 6 are arranged in longitudinal line along the sides of the hull of the vessel, and said propeller-screws are provided with shafts 7, and the inner ends of the end propeller-shafts and both ends of the central shaft are supported in boxes 8, which project into the longitudinal concavities in which said propeller-shafts are mounted, and the outer ends of the end propeller-shafts are supported in bearings 9, and the boxes 8 are provided with electrical motors 10, and the propeller-shafts are provided with gear-wheels 11, and the motors 10 with gear-wheels 12, which operate in connection therewith.

The motors 10 may be of any desired form or construction, and in the drawings I have only shown the casings thereof, and located in the hull of the vessel at any desired point are boilers 13, one of which is shown in full lines in Fig. 1 and two of which are shown in dotted lines in Fig. 2, and these boilers are provided with a smoke-stack 14, and suitably arranged within the hull of the vessel at any desired point are storage batteries or accumulators 16, any desired number of which may be employed.

I also employ an electrical generator or generators 17, and said generator or generators are in electrical connection with the storage batteries or accumulators 16, as shown at 18, and said storage batteries or accumulators are in electrical connection with the motors 10, as shown at 19, and extending from said storage batteries or accumulators 16 are conductors 20, which lead directly to the pilot-house, and other electrical conductors 21 are in connection with the motors 10 and also lead to the pilot-house.

The steering mechanism consists of a rudder 22, which is connected with a vertical rudder-shaft 23, with which is connected a tiller 24, and mounted in front of the tiller 24 is an electrical motor 25, which is provided with a gear-wheel 26, and mounted at the rear of the gear-wheel 26 and at each side thereof are drums 27, each of which is provided with a gear-wheel 28, and said gear-wheels 28 are adapted to be operated by the gear-wheel 26, and mounted on the drums 27 are tiller cords or ropes 29, and each of these cords or ropes is passed around a pulley 30, and said cords are then crossed and connected with the opposite arms of the tiller 24, as shown in Figs. 1 and 3. Connected with the electrical motor 25 of the steering mechanism are two wires or conductors 31, which also lead to the pilot-house, these wires or conductors being in direct connection with the motor or motors, as shown at 32.

My invention is not limited to any particular form of generators, batteries, or accumulators, nor to any particular form of motor, nor to the particular means herein shown and described for connecting the propeller-shafts with the motor, and any suitable construc-

tion may be employed for this purpose, and it will be apparent that many changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

In my invention the generator, propeller-shafts, steering mechanism, and other operative parts are under the control of the pilot and may be operated directly from the pilot-house, and the advantages of my improvement will be apparent to all those familiar with the construction of ocean-going vessels.

The electrical plant will occupy only a fraction of the space of a steam plant, and instead of the great propeller-shafts employed in steam-propelled vessels, which usually weigh from eighty to one hundred tons, my improved vessel will have a plurality of shafts mounted at the opposite sides thereof, each of which need not weigh over four tons, and said propeller-shafts may be operated singly or altogether, at the will of the pilot, and the propellers at one side may be turned in one direction, while those at the opposite side are turned in the opposite direction, and when the entire complement of propellers is in action the noise and confusion thereof will be reduced to a minimum and there will be no jar caused by the irregular action of said propellers. The excessive heat is also almost entirely done away with, and the enormous strain which is occasioned in vessels of the usual construction by reason of the propeller running in the air, which is frequently occasioned by the pitching of the vessel, is also entirely avoided. In my improvement the power is also distributed along the entire length of the vessel equally on both sides and the propellers are placed low enough to avoid any danger of not being submerged at all times.

The outer ends of the end propeller-shafts may also be provided with motors, and when thus constructed there will be two motors connected with each shaft, and it will be apparent that the hull of the vessel may be constructed in any desired manner and any desired number of generators may be employed, and the storage batteries or accumulators will serve as ballast for the vessel, and the generating-machines may be kept at work, so as to generate electricity and to charge the batteries when the ship is in port as well as when the vessel is in motion.

It will also be apparent that there is comparatively no danger whatever of all the propellers getting out of order or breaking at the same time, and there will therefore be no danger of the vessel foundering or becoming unmanageable at sea.

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

1. A vessel provided with a plurality of pro-

PELLER-SHAFTS which extend longitudinally of the sides thereof below the water-line, spiral plates mounted upon said shafts, said shafts being mounted in bearings and being projected into hollow casings, electric motors mounted in said casings and adapted to engage said extensions, said motors being in electrical connection with the pilot-house and said vessel being provided with an electrical steering mechanism which is also in electrical connection with the pilot-house, substantially as shown and described.

2. The herein-described means for propelling and steering vessels, comprising the combination with a vessel, the hull of which is provided at each side thereof with longitudinal concavities 5, situated below the water-line, of propeller-screws 6 mounted on shafts 7, boxes 8 supporting said shafts 7, the outer end of said propeller-shafts being supported in bearings 9, electric motors 10 mounted in said boxes 8, gear-wheels 11 mounted on said shafts 7 and the said motors being provided with gear-wheels 12 adapted to mesh therewith, said motors 10 being in electrical connection with a generator and with storage batteries and being also in electrical connection with the pilot-house, and means for steering said vessel, substantially as shown and described.

3. The herein-described means for propelling and steering vessels comprising the combination with a vessel, the hull of which is provided at each side thereof with longitudinal concavities 5, situated below the water-line, of propeller-screws 6 mounted on the shafts 7, boxes 8 supporting said shafts 7, the outer ends of said propeller-shafts being supported in bearings 9, electric motors 10 mounted in said boxes 8, gear-wheels 11 mounted on said shafts 7 and the said motors being provided with gear-wheels 12 adapted to mesh therewith, said motors 10 being in electrical connection with a generator and with storage batteries and being also in electrical connection with the pilot-house, and means for steering said vessel, consisting of a rudder 22 mounted on a shaft 23, tiller 24, electric motor 25, having gear-wheels 26, drums 27, provided with gear-wheels 28 adapted to mesh with said gear-wheels 26, cords 29 mounted on said drums, said cords being passed around a pulley 30 and connected with the opposite arms of the tiller 24, said motor 25 being also connected with the pilot-house and with an electric generator and storage battery, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 6th day of May, 1897.

DANL. O'FLAHERTY.

Witnesses:

H. C. RAMSEY,
M. W. STEWART.