No. 830,011. PATENTED SEPT. 4, 1906.

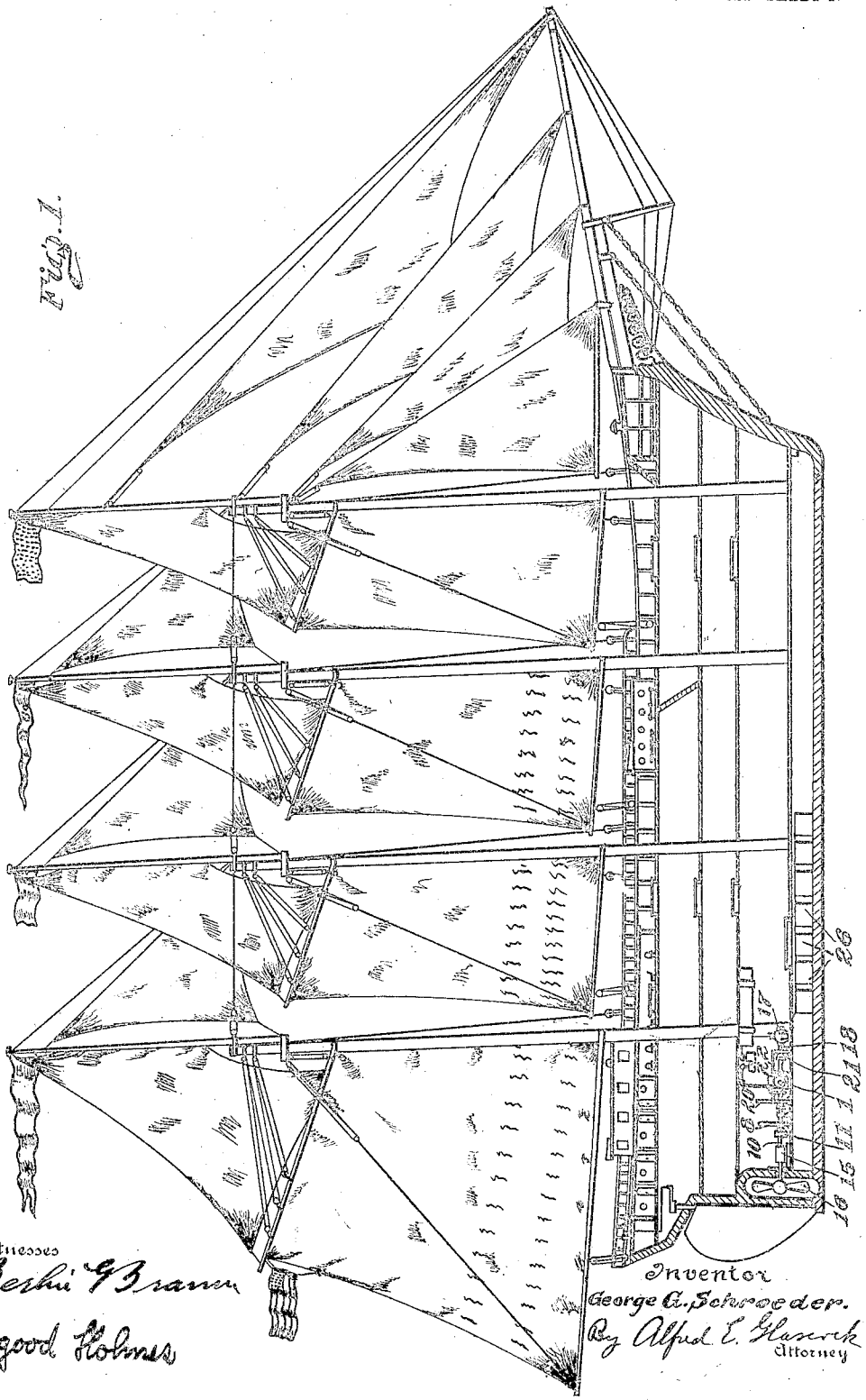
G. G. SCHROEDER.

MARINE PROPULSION AND LIGHTING.

APPLICATION FILED MAR. 27, 1905.

5 SHEETS—SHEET 1.

Fig. 1.



Witnesses
Berlin G Braun
Osgood Holmes

Inventor
George A. Schroeder.
By Alfred L. Glascock
Attorney

No. 830,011. PATENTED SEPT. 4, 1906

G. G. SCHROEDER.

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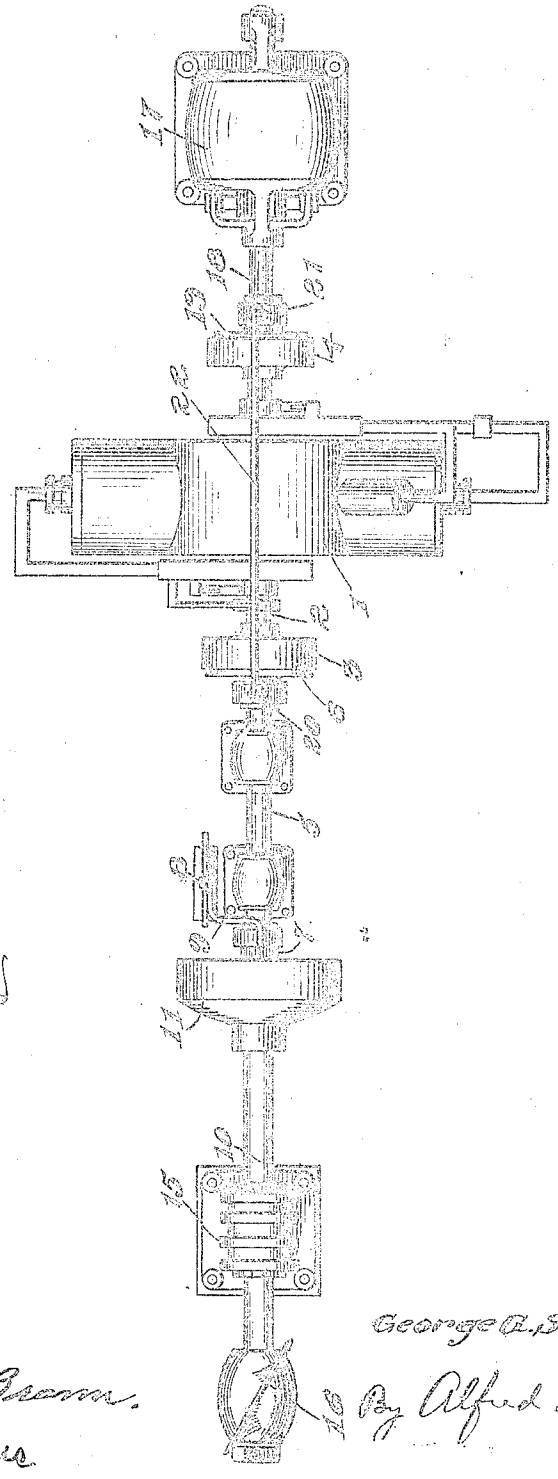


Fig. 2.

Witnesses
Berlin E. Brown.
Osgood Holmes

Inventor
George G. Schroeder
By Alfred E. Hancock
Attorney

No. 830,011. PATENTED SEPT. 4, 1906

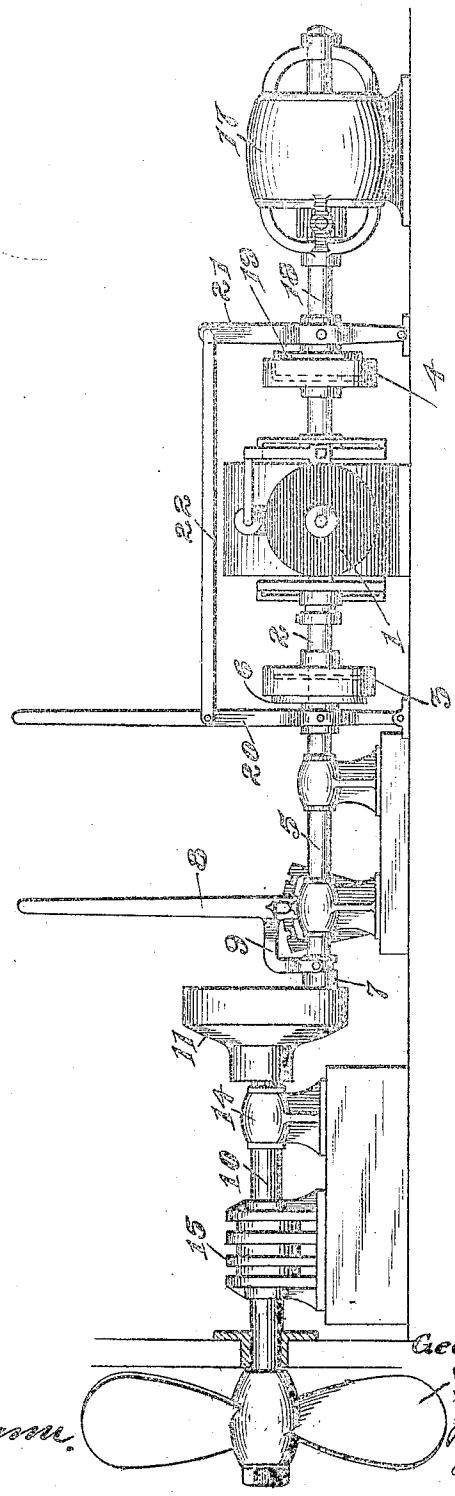
G. G. SCHROEDER.

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5 SHEETS—SHEET 3.

Fig. 3.



Witnesses
Berlin G. Brown.
Osgood Holmes.

Inventor
George G. Schroeder
By Alfred E. Hamilton
Attorney

No. 830,011. PATENTED SEPT. 4, 1906.

G. G. SCHROEDER.

MARINE PROPULSION AND LIGHTING.

APPLICATION FILED MAR. 27, 1905.

5 SHEETS—SHEET 4

Fig. 3.

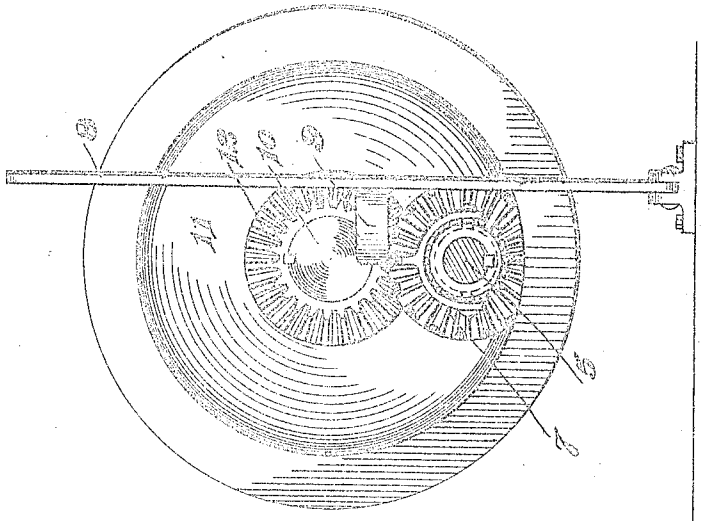
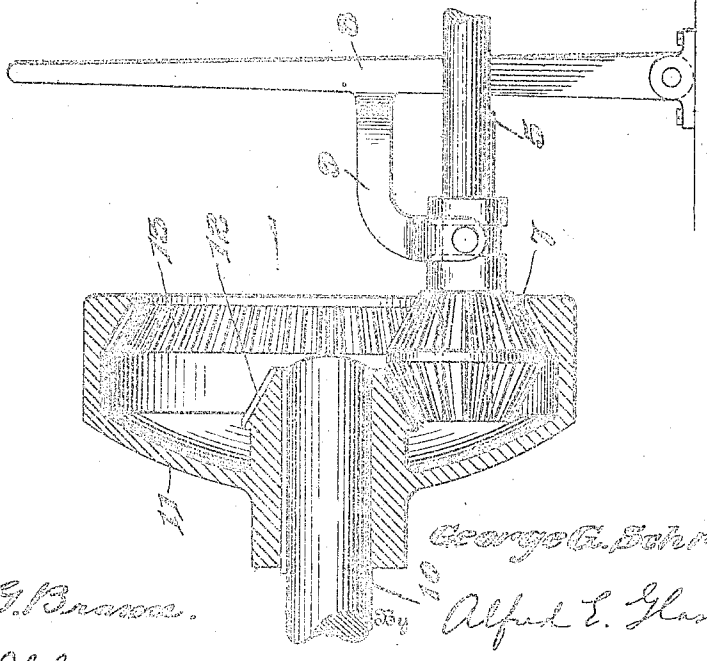


Fig. 4.



Witnesses
Leslie G. Brown.
Osgood Holmes.

Inventor
George G. Schroeder
by Alfred E. Hancock
Attorney

No. 830,011. PATENTED SEPT. 4, 1906.

G. G. SCHROEDER.

MARINE PROPULSION AND LIGHTING.

APPLICATION FILED MAR. 27, 1905.

5 SHEETS—SHEET 5.

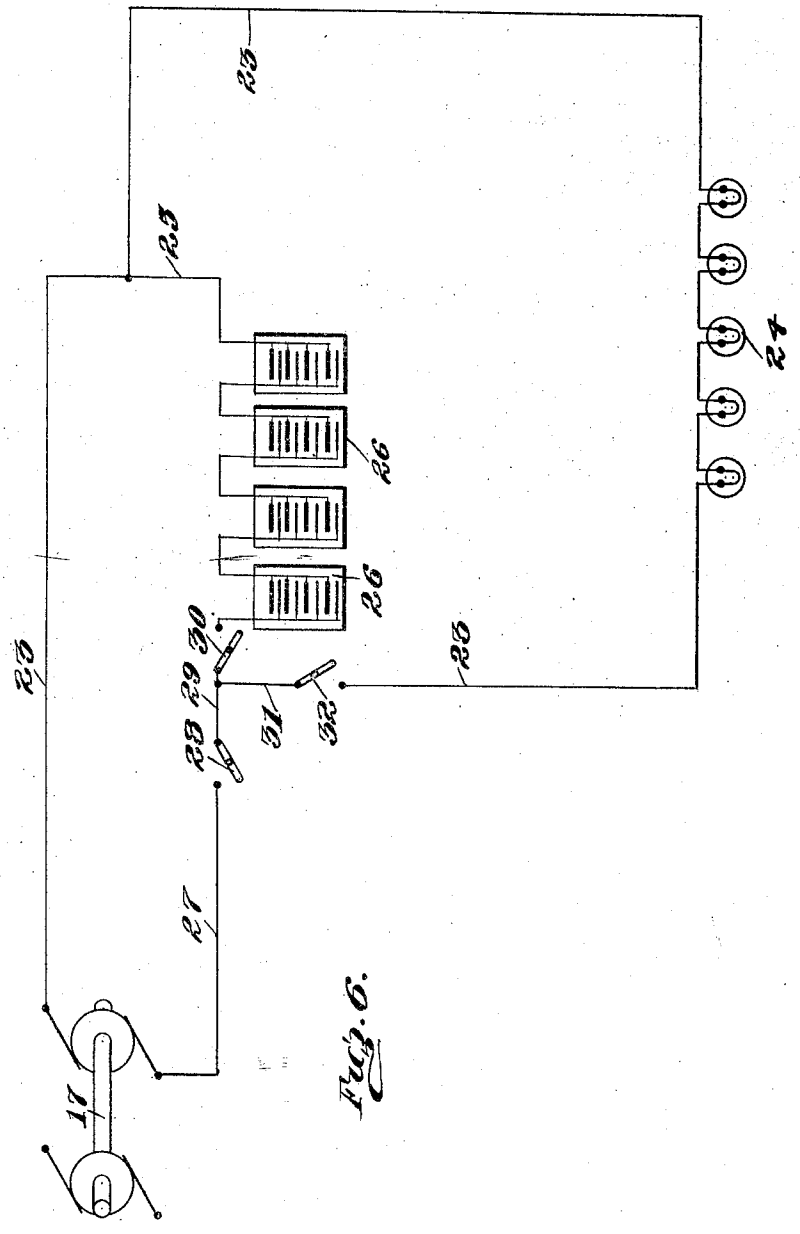


Fig. 6.

Witnesses
Berlin G. Brame
Osgood Holmes.

Inventor
George G. Schroeder
By Alfred E. Glascock
Attorney

UNITED STATES PATENT OFFICE.

GEORGE G. SCHROEDER, OF WASHINGTON, DISTRICT OF COLUMBIA.

MARINE PROPULSION AND LIGHTING.

No. 830,011. Specification of Letters Patent. Patented Sept. 4, 1906.

Application filed March 27, 1905. Serial No. 252,259.

To all whom it may concern:

Be it known that I, GEORGE G. SCHROEDER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Marine Propulsion and Lighting, of which the following is a specification.

This invention has relation to marine propulsion and lighting; and it consists in the novel construction and arrangement of its parts, as hereinafter described.

The object of the invention is to provide an engine of the rotary type which is adapted to have its shaft connected with the shaft of a rotary generator. The said generator is electrically connected with suitable storage batteries, which in turn are connected with lights used for illumination and for signaling. The shaft of the said engine is also adapted to be connected with the propeller-shaft, and by this means rotary motion is transmitted to the propeller. A suitable means of special construction is provided whereby the rotary movement to the propeller may be reversed. A system of levers and clutches is provided, which are so arranged that when the engine is thrown out of gear with the propeller it is at the same time thrown in gear with the generator, and vice versa. It will thus be seen that the engine is at all times working under a load—that is, it is either operating the generator or the propeller—and thus the engine cannot run without load and rack itself.

The form of engine employed is preferably of the rotary hydrocarbon type. The generator is adapted to store the batteries with current, which is used for lighting the craft and also for signaling. A set of switches is provided in the electric circuit, whereby the current may be sent direct from the generator to the lights or from the batteries to the lights.

With these and other objects in view my invention consists of the special arrangement and construction of the parts, as will be hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a craft, illustrating the location of the propulsion means therein. Fig. 2 is a top plan view of the propulsion means. Fig. 3 is a side elevation of the propulsion means. Fig. 4 is a sectional view of the reversing means used between the propeller and the engine-shaft. Fig. 5 is a front elevation of the reversing means shown in Fig. 4, and Fig. 6 is a diagrammatic view of the electric circuits used in connection with the electrical features of the device.

In this invention the prime mover consists of a rotary engine 1. The said engine is preferably of the hydrocarbon type, but a steam rotary may be employed, if desired. The shaft 2 of the said engine rotates in one direction only, and to each end of the said engine-shaft 2 are fixed disks 3 and 4. The supplemental shaft 5 is in alinement with the shaft 2. The said shaft 5 is provided with the sliding disk 6, which is adapted to engage and disengage the disk 3. To the end of the shaft 5 is attached a sliding double-beveled gear-wheel 7. The lever 8 is suitably fulcrumed and is provided with an arm 9, which engages the collar of the gear-wheel 7 and is adapted to slide the same. The propeller-shaft 10 is located behind or beyond the end of the supplemental shaft 5 and is provided at its end with a fixed casing 11. The said casing 11 is provided with a centrally-located beveled gear 12 and around its inner edge with the internal beveled gear 13. The gear-wheel 7 is adapted to mesh with either of the gears 12 or 13. The bearing 14 is located immediately behind the casing 11. The shaft 10 is also provided with a thrust-bearing 15, of any suitable pattern, and the propeller 16.

The shaft of the rotary generator 17 is in alinement with the shaft 2 of the engine 1. The shaft 18 of the said generator is provided with a sliding disk 19, which is adapted to engage and disengage the fixed disk 4, located upon the shaft 2 of the engine 1. Adjacent to each of the sliding disks 6 and 19 is located a vertically-extending lever 20 and 21. The said levers engage the collars of the sliding disks 6 and 19, respectively, and the said levers are connected together by a cross-link 22. The said levers 20 and 21 are so spaced apart by the cross-link 22 that when the levers are moved to bring the disk 6 into frictional contact with the disk 3 the disk 19 is moved out of frictional contact with the disk 4, and vice versa. It will thus be seen that when the engine 1 is thrown out of gear with the propeller-shaft 10 it is simultaneously thrown into gear with the shaft of the generator 17, and vice versa.

Thus the engine is at all times operating under a load.

It is obvious that by bringing the wheel 7 into mesh with the beveled gear 12 the propeller-shaft 10 will be rotated in one direction and that by bringing the said beveled gear-wheel 7 into mesh with the internal beveled gear 13 the propeller-shaft 10 will be rotated in the opposite direction. In this connection it will be noted that it is only necessary to allow a certain amount of play or lost motion between the teeth to permit them to adjust themselves to each other. This is particularly so in view of the fact that each tooth must be parallel with the axis of the shaft by which it is carried—*i. e.*, must extend in the same longitudinal direction—and consequently they are approximately parallel when in engagement.

By referring to the diagrammatic view, as shown in Fig. 6 of the drawings, it will be seen that the wire 23 connects one brush of the generator 17 with the lights 24 and that the wire 25 connects the wire 23 with the storage cells or battery 26. The wire 27 connects at one end with the opposite brush of the generator 17 and leads to a point opposite the switch 28. The said switch is connected, by means of the wire, with the switch 30, which is adapted to connect or disconnect with the terminal of the cells 26. The wire 31 connects at one end the wire 29 and at its opposite end the switch 32, which is adapted to engage or disengage a point at the end of the wire 23. It will thus be seen that by closing the switches 28 and 30 and opening switch 32 the current from the generator 17 will pass into and store in the cells 26; also, by closing the switches 28 and 32 that the current from the generator will pass along the wire 23 through the lights 24; also, by closing the switches 30 and 32 and opening the switch 28, that the stored current from the cells 26 will pass along the wire 23 through the lights 24. Therefore the lights 24 may be supplied by current directly from the generator 17, or the generator may be used to store the cells 26, after which the current stored in the said cells may be sent to the lights 24. Thus should the marine propulsion not be required in the daylight the engine 1 may be used for storing current in the cells 26, and should the engine be required at night for propelling the craft the current stored during the day in the cells 26 may be used for illuminating the lights 24.

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

1. A marine propulsion mechanism consisting of a rotary engine, a propeller-shaft connected with the shaft of said rotary engine, a casing located upon the propeller-shaft, and having a beveled gear located at its edge and an internal gear, a sliding gear-wheel located upon the engine-shaft, and adapted to be moved longitudinally of the engine-shaft to engage one or the other of the gears of said casing.

2. A marine propulsion mechanism consisting of a rotary engine, a propeller-shaft connected with the shaft of said rotary engine, a casing located upon the propeller-shaft, and having a beveled gear and internal gear, a sliding wheel located upon the engine-shaft, and having two sets of beveled gear-teeth, and adapted to be moved longitudinally of the engine-shaft to engage one or the other of the gears of said casing.

3. A marine propulsion mechanism consisting of a rotary engine, a propeller-shaft connected with the shaft of said rotary engine, a casing located upon the propeller-shaft, and having a beveled gear centrally located, and at its edge an internal gear, a sliding wheel located upon the engine-shaft and having two sets of beveled gear-teeth, and adapted to be moved longitudinally of the engine-shaft to engage one or the other of the gears of said casing.

4. A marine propulsion mechanism consisting of a rotary engine, friction-disks located upon the shaft of said engine, a propeller-shaft located in a different plane from the shaft of said engine, a reversing means connecting the engine-shaft and the propeller-shaft together.

5. A marine propulsion mechanism consisting of a rotary engine, friction disks located upon the shaft of said engine, a propeller-shaft located in a plane above the plane of the engine-shaft, and a reversing means connecting the engine-shaft and the propeller-shaft together.

6. A marine propulsion mechanism comprising an engine provided with a shaft, clutches located on said engine-shaft, a propeller-shaft located on a different plane from said engine-shaft, reversing mechanism connecting the contiguous ends of said propeller-shaft and said engine-shaft, and a generator operatively connected with the other end of said engine-shaft.

7. A marine propulsion mechanism consisting of a rotary engine, a supplemental shaft located in alinement with the shaft of said engine, friction-disks carried by the engine-shaft and said supplemental shaft, and adapted to engage and disengage each other, and a propeller-shaft located beyond the supplemental shaft, the adjoining ends of the propeller-shaft and the supplemental shaft being provided with reversing means.

8. A marine propulsion mechanism consisting of a rotary engine, a supplemental shaft located in alinement with the shaft of said engine, friction-disks carried by the engine-shaft and said supplemental shaft, and adapted to engage and disengage each other, a propeller-shaft located beyond the supple-

mental shaft, the adjoining ends of the propeller-shaft and the supplemental shaft being provided with reversing means, a rotary generator having its shaft in alinement with the engine-shaft, and friction-disks carried by the engine-shaft and the generator-shaft, and adapted to engage and disengage each other.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

GEORGE G. SCHROEDER.

Witnesses:
E. W. VAN DYKE,
B. E. BROOKE.