

No. 841,583.

PATENTED JAN. 15, 1907.

G. G. SCHROEDER.

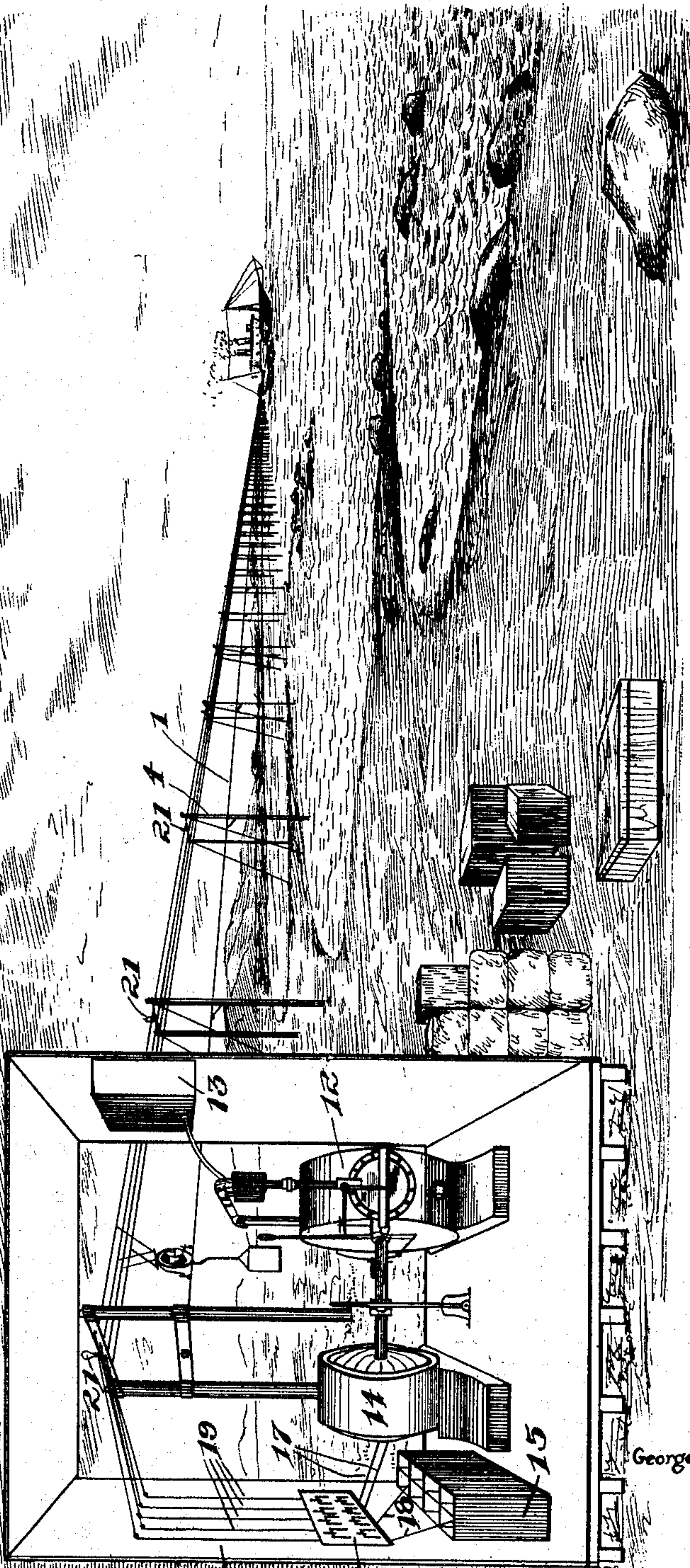
MARINE ELECTRIC WHARFAGE.

APPLICATION FILED FEB. 28, 1905. RENEWED JUNE 25, 1906.

4 SHEETS—SHEET 1.



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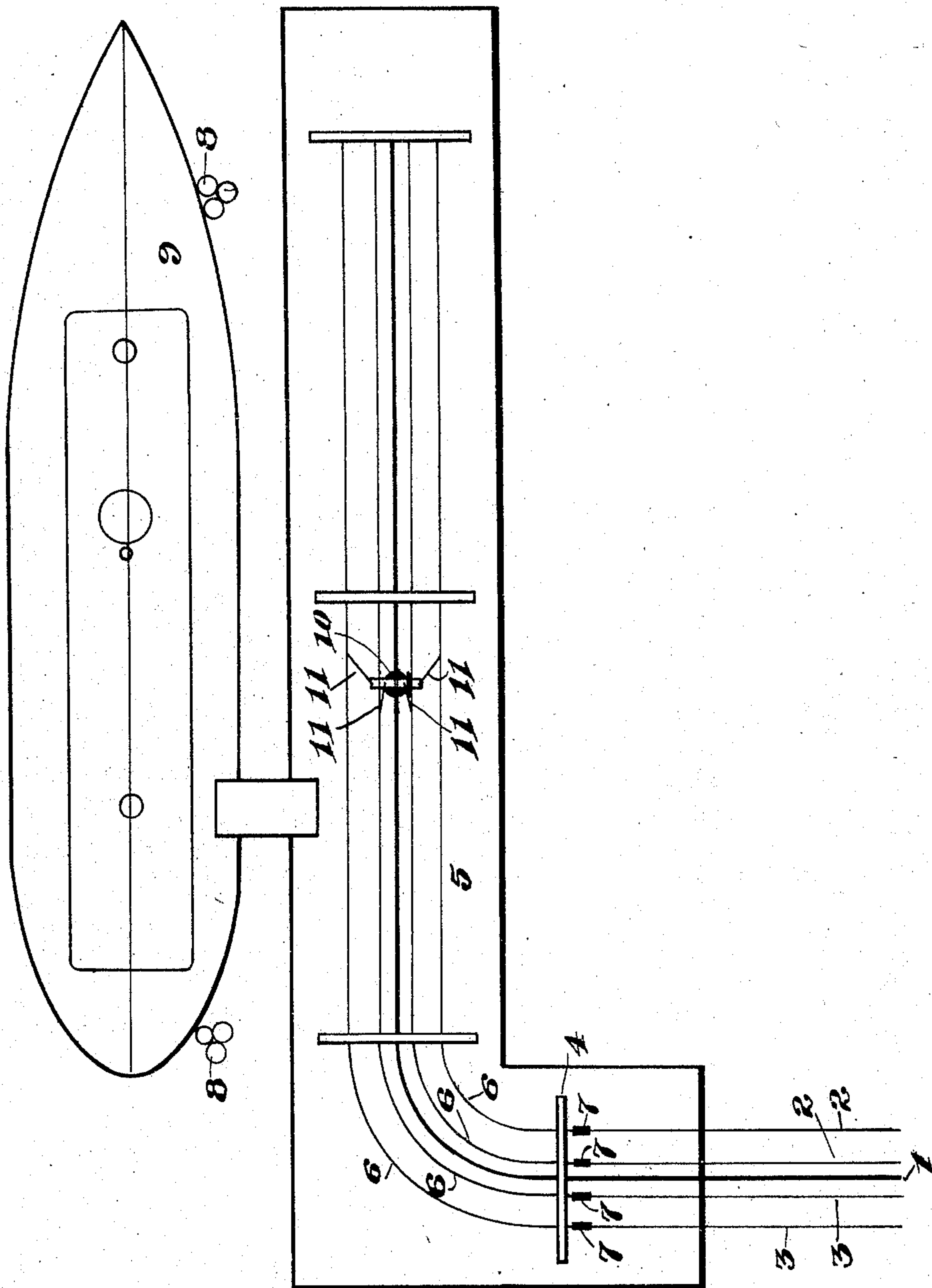
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4 SHEETS—SHEET 2.

Fig. 2.



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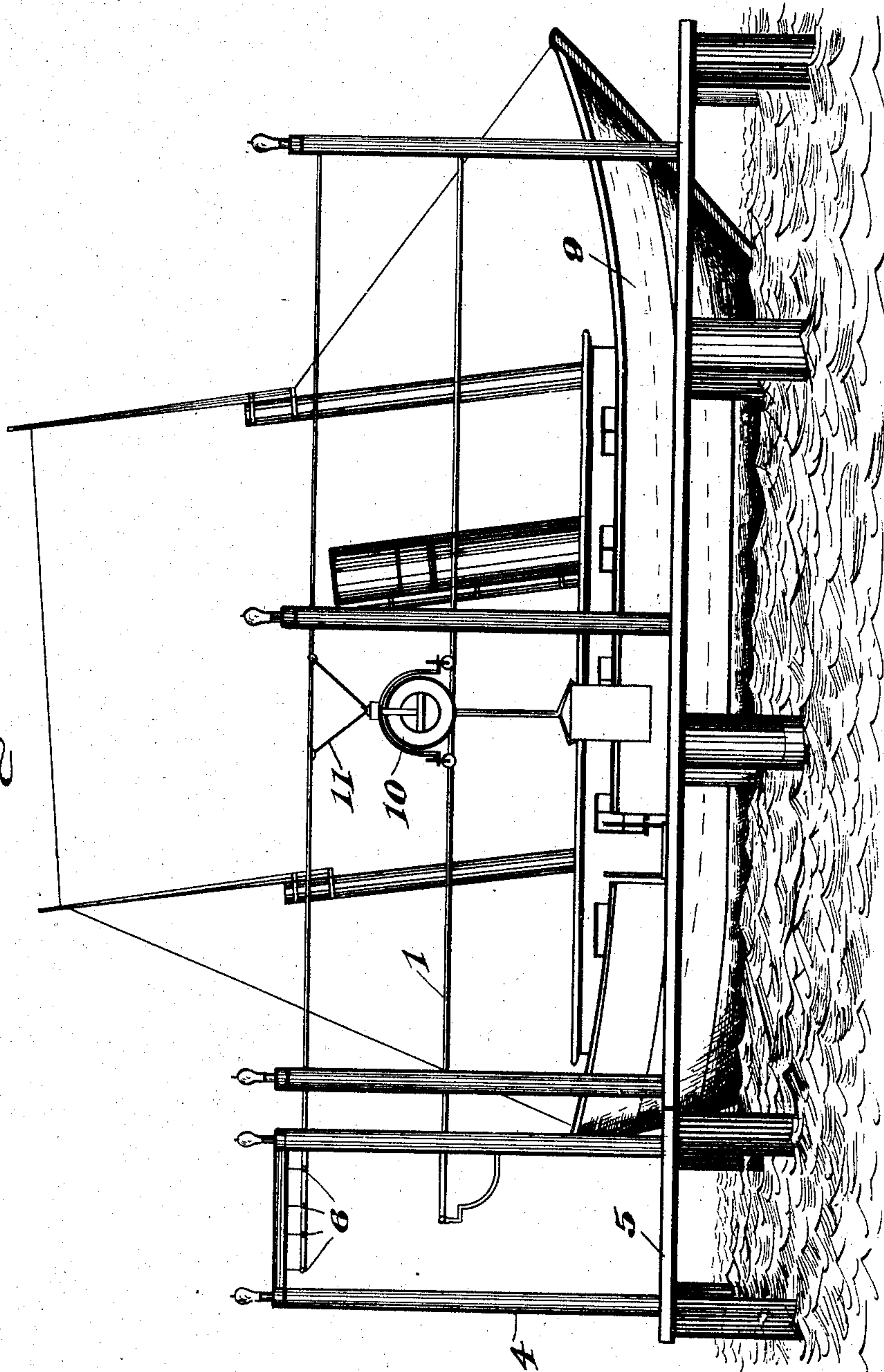
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4 SHEETS—SHEET 3.

Fig. 3.



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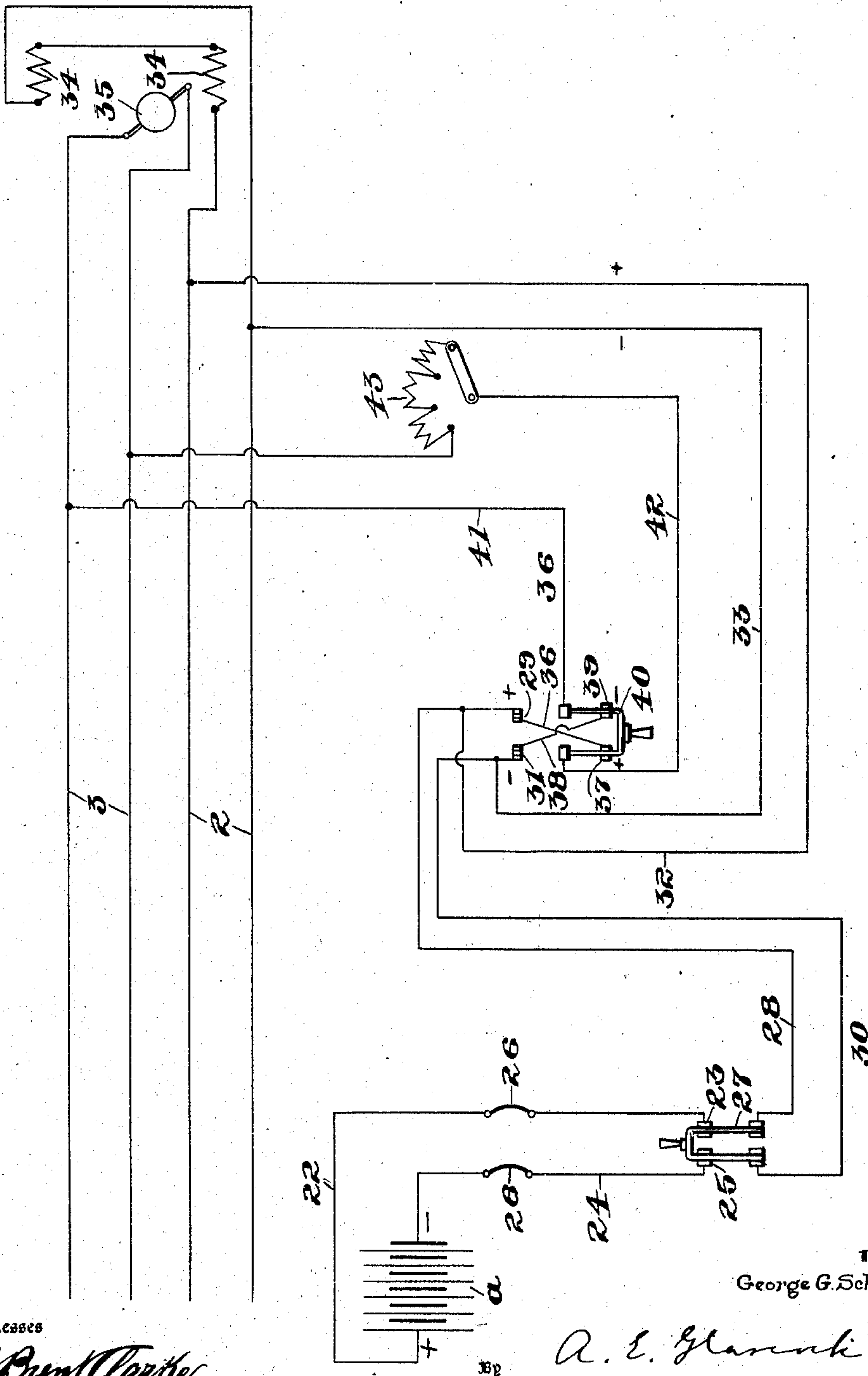
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4 SHEETS—SHEET 4.

Fig. 1.



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UNITED STATES PATENT OFFICE.

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MARINE ELECTRIC WHARFAGE.

No. 841,583.

Specification of Letters Patent.

Patented Jan. 15, 1907.

Application filed February 28, 1905. Renewed June 25, 1906. Serial No. 323,347.

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 Electric Wharfage, of which the following is a specification.

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

The object of the invention is to provide a wharfage of a fixed nature which is simple and cheap of construction and operation and which is adapted to be located at places along the coast and upon river-shores where the goods to be delivered and received from ships is not of sufficient quantity to justify the establishment and maintenance of wharves of the usual character and construction.

The wharf consists, primarily, of an elevated cable or track which extends from the shore out over the water and at its outer end is extended at an angle to the general outward line of direction of the main portion of the said track. Under the said angular extension of the track is erected a platform upon which goods are delivered from vessels and upon which goods are placed to be delivered to vessels. A series of electric-current wires follow the track in its outward direction, and at the point where the said wires approach the said platform they are connected to insulated guides, which extend over the platform. A carrier is adapted to travel upon the said track and is provided with a motor and trolley-arms which engage the said current-wires and the guides located at the ends thereof. A means for generating and supplying current is located upon the shore. Said means consists, preferably, of a rotary gas or gasoline engine, to the shaft of which is attached the shaft of a rotary electric generator. Storage batteries are also provided, and the electric generator is connected with a switchboard, which in turn is connected with the storage batteries and the current-wires in such manner that by throwing appropriate members of the switch the current may be generated or stored in the battery, or it may be generated and sent along the current-wires, or the stored current may be sent

from the battery along the current-wires. The fixtures supporting the trackway may be provided with electric-light fixtures which are electrically connected together and also connected with the generator or battery through the switchboard and connections above described, so that the wharf may be properly illuminated at night.

In the accompanying drawings, Figure 1 is a landscape view showing the general outline of the system and appliances connected therewith. Fig. 2 is a top plan view of the outer end of the wharf system, showing the diagram of a vessel in proper position with relation thereto for unloading. Fig. 3 is a side elevation of the parts of the system illustrated in Fig. 2. Fig. 4 is a diagrammatic view showing the current-wires and mechanism for controlling the same.

The system consists of the suspended cable or track 1, over which are located the wires 2 2 and 3 3. All of the said wires are parallel to each other and parallel to the track. The wires 2 2 and 3 3 and cable 1 are supported by the uprights 4, which are fixed in the earth or along the bottom of the water-course. The wires 2 2 and 3 3 extend along the cable 1 substantially along its entire outward length. At its extreme outer end the said cable 1 extends at an angle to the general outward direction of the cable, and below said angular extension is located a platform 5. The guides 6 6 follow the angular extension of the track 1 and are connected to the outer ends of the current-wires 2 2 and 3 3. (See Fig. 2.) Just outside of the outer edge of the platform 5 the piles 8 8 are driven, and to said piles a vessel 9 may be lashed for loading or unloading upon the platform 5. A carrier 10 is provided with a suitable motor and is adapted to travel upon the track 1. Said carrier is provided with the trolley-arms 11, the upper ends of which engage the current-wires 2 2 and 3 3 and, when over the platform 5, the guides 6 6.

A station is located on shore which is provided with suitable means for generating the electric current. Said means consists, preferably, of a rotary gas or oil engine 12, which is fed by oil from a tank 13. The rotary generator 14 is located opposite the gas-engine 12, the shaft of the said rotary engine being in alinement with the shaft of the gas-engine

12. A series of storage batteries 15 is also provided, and a switchboard 16 is suitably located and provided with suitable switches. The wires 17 17 connect the generator 14 with the switch 16. The wires 18 connect the storage battery 15 with the switchboard 16, and the wires 19 connect the switchboard 16 with the current-wires 2 2 and 3 3. The wire 20 connects the electric-light fixtures 21, suitably located along the supporting fixtures of the system.

Description and arrangement of the current-wires, as illustrated in Fig. 4, is as follows: As shown in the said figure, *a* represents either the generator 14 or the storage battery 15. The wire 22 connects one pole of the generator or storage with the switch-socket 23. A wire 24 connects the opposite pole of the source of supply *a* with the switch-socket 25. The fuses 26 26 are located at suitable points on the wires 22 and 24. The switch 27 is adapted to enter the sockets 23 and 25, and the wire 28 connects one of the ends of said switch with the socket 29, and the wire 30 connects the other end of the switch 27 with the socket 31. The wire 32 connects the wire 28 with one of the line-wires 2. The wire 33 connects the wire 30 with the other line-wire 2. The line-wires 2 2 are connected through the trolley-arms of the carrier with the field 34 of the motor 35. The cross-wire 36 connects the socket 29 with the socket 37, and the cross-wire 38 connects the socket 31 with the socket 39. The pole-changer 40 (shown in the form of a switch) is adapted to be swung into the sockets 29 and 31 or 39 and 37. One end of the switch constituting the pole-changer 40 is connected, by means of the wire 41, with one of the line-wires 3, and the opposite end of the said switch 40 is connected, by means of the wire 42, with the other line-wire 3. The rheostat 43 is located, preferably, upon the wire 42. Both of the line-wires 3 3 are connected, by means of the trolley-arms of the carrier, with the armature 35 of the motor. The armature 35 is held in a fixed position against rotation, while the field 34 rotates about the said armature.

Presuming that the parts are in the positions as indicated in Fig. 4, the current starts from the generator *a*, passes along the wire 22 to the socket 23, then through the switch 27, along the wire 28, along the wire 32 to the inner current-wire 2, thence through the field-magnet winding 34, along the outer current-wire 2, thence along wire 33 to wire 30, then through switch 27, along wire 24, back to the opposite pole of the generator *a*. At the same time the current passes from the wire 30, through the socket 29, and along wire 36 to the socket 37, thence along one end of the switch 40 to wire 42, thence along the said wire 42, through rheostat 43 to the inner current-wire 3, thence to the armature

35, thence along the outer current-wire 3, thence along wire 42 to the other end of the switch 40, thence to socket 39, thence along the cross-wire 38 to socket 31, thence back to the generator over the wire 30 and its connections. By supplying the current to the armature and field, as above described, the said armature is rotated in one direction. To change the direction of rotation of the armature, the switch 40 is disengaged from the sockets 37 and 39 and turned in the sockets 29 and 31. The current then passes from the generator *a* to the field 34, as above described, while the course of the current through the armature 35 is reversed.

The switch 40 is located at the shore end of the wharf and is operated so as to send the carrier out to the platform or bring it back. When the carrier goes out to the platform, its trolley-arms pass from the current-wires 2 2 and 3 3 onto the insulated section 6 6, which cuts off the current and the carrier stops. In the meantime the carrier has traveled along the angular extending portion of the track 1 and runs out so that the operator on shore can see it. He therefore reverses the switch 40, and when the carrier is loaded it is run back, so that the trolley-arms engage the current-wires 2 2 and 3 3 and the carrier travels toward shore.

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

1. A marine wharfage system such as described consisting of a track extending from the shore out over the water, and at its outer end extending at an angle to the general line of outward direction, a carrier adapted to travel upon said track, current-wires following the track along the major portion of its outward length, insulated guides attached to the ends of said current-wires, and extending along the track at an angular extension thereof, and a means located upon the shore for reversing the current over the wires.

2. A marine wharfage system consisting of a track extending from the shore out over the water, a carrier adapted to travel upon said track, current-wires following said track, and adapted to supply electric current to the carrier, a means for generating the current consisting of a rotary engine, a rotary generator connected at its shaft to the shaft of said engine, a storage battery and electrical connections between the generator, battery and current-wires and suitable switches.

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

GEORGE G. SCHROEDER.

Witnesses:

ARTHUR L. FILL,
BARTON E. BROOKE.