

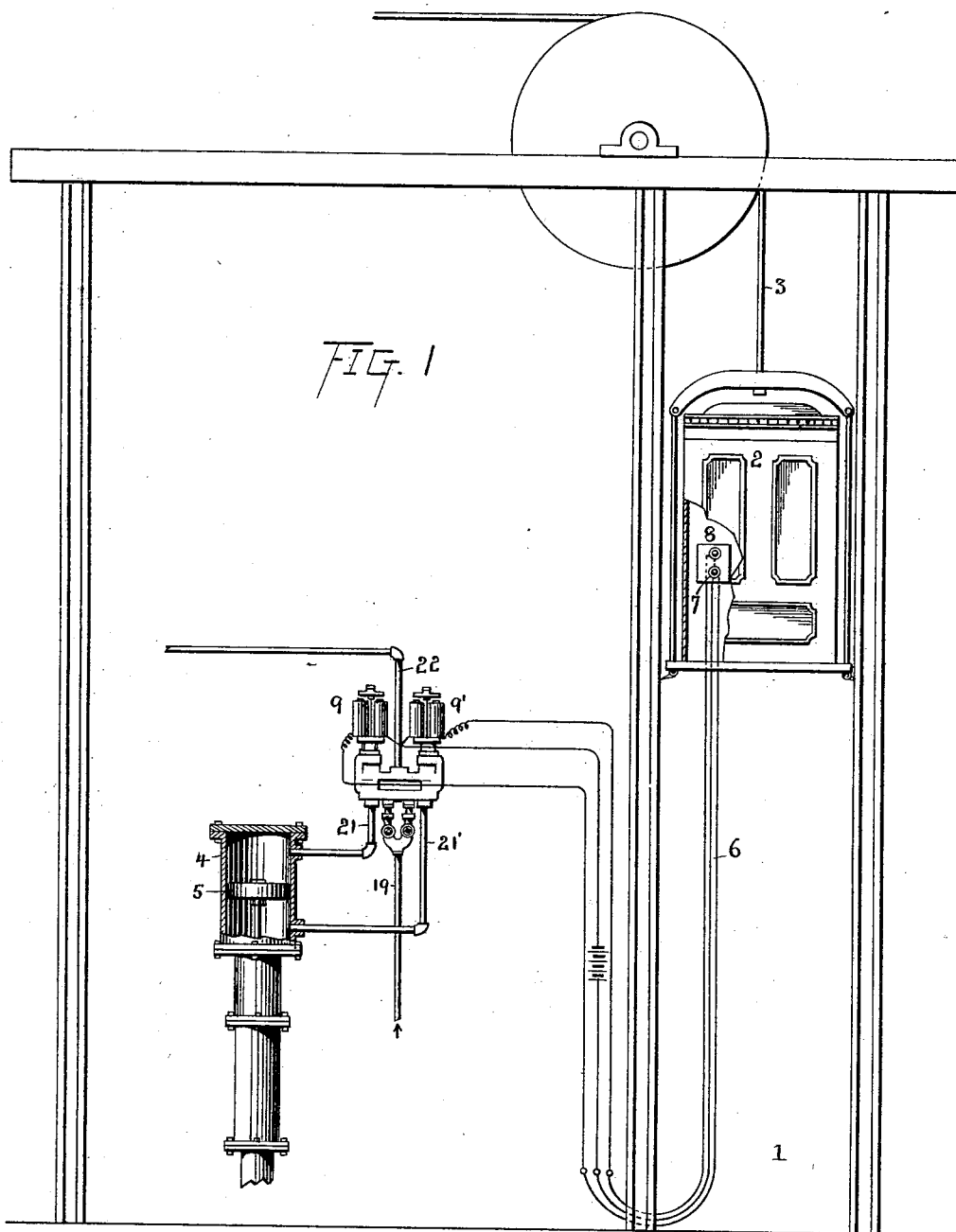
(No Model.)

3 Sheets—Sheet 1.

C. E. ONGLEY.
ELECTRIC VALVE CONTROLLER.

No. 512,316.

Patented Jan. 9, 1894.



WITNESSES:

Edward P. Rowland
W. D. Oberly

INVENTOR

C. E. Ongley.

BY

Syert Selby
ATTORNEYS.

(No Model.)

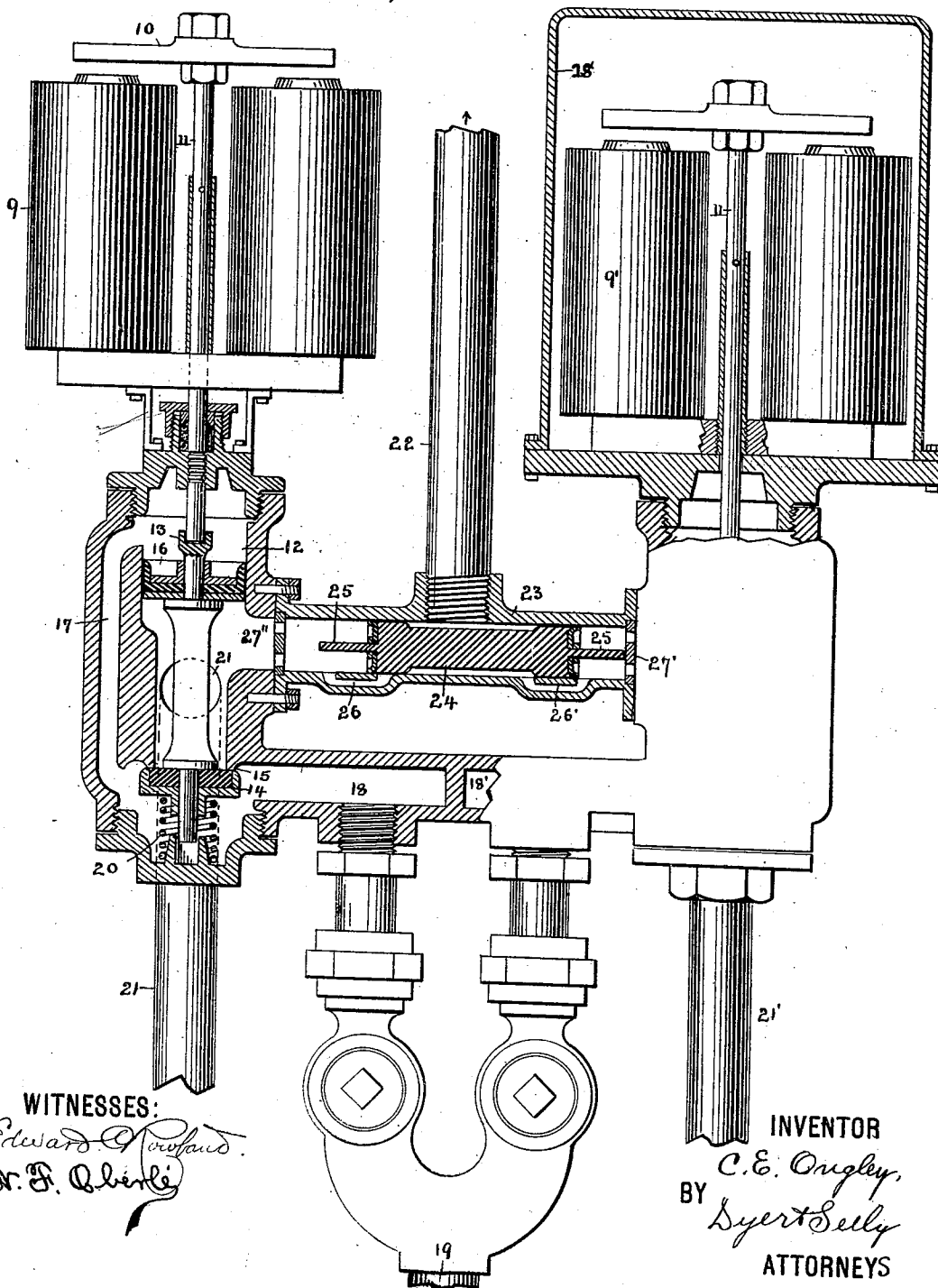
3 Sheets—Sheet 2.

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Fig. 2.



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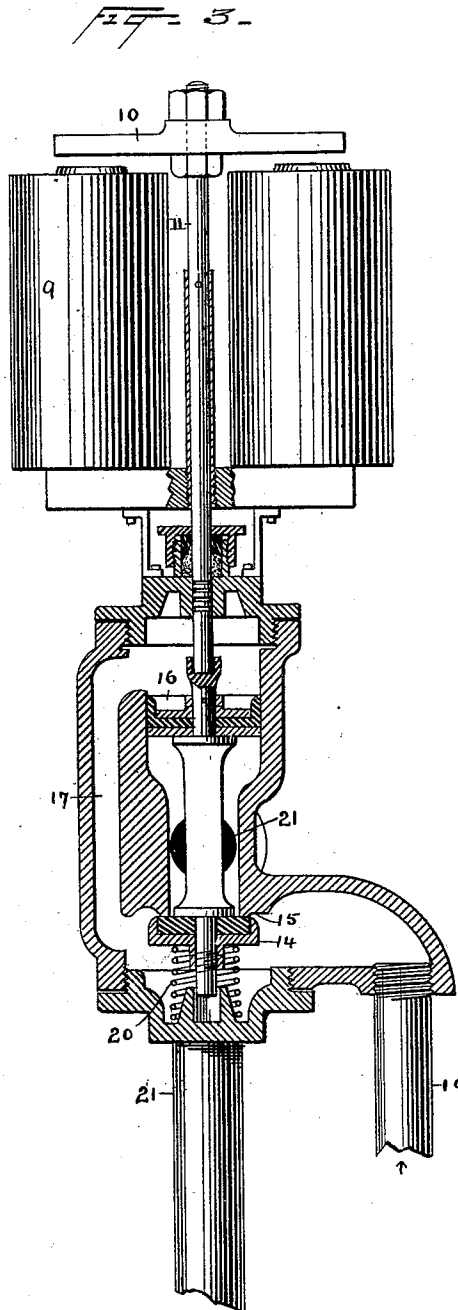
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WITNESSES:

Edward C. Rowland.
A. F. Clarke

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UNITED STATES PATENT OFFICE.

CHARLES EDWARD ONGLEY, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE ONGLEY ELECTRIC COMPANY, OF SAME PLACE.

ELECTRIC VALVE-CONTROLLER.

SPECIFICATION forming part of Letters Patent No. 512,316, dated January 9, 1894.

Application filed December 13, 1890. Renewed November 16, 1892. Serial No. 452,149. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EDWARD ONGLEY, a citizen of the United States, residing at New York, county and State of New York, have invented a certain new and useful Improvement in Electrical Valves and Controlling Apparatus for Elevators, &c., of which the following is a specification.

The present invention relates to mechanism for raising and lowering elevators by means of any suitable motor, the operation of the motor being controlled by an electrical valve of the character hereinafter set forth.

The invention consists in the improved mechanism for controlling elevators, and in the improved valve, hereinafter described and claimed, and which is illustrated in the accompanying drawings, in which—

Figure 1 is a general view of an elevator showing the position of the valve mechanism in relation to the controlling device for the motor, and showing the circuits leading from the valve mechanism to the elevator car. Fig. 2 is a side view partially in section of the valve mechanism; and Fig. 3 is a view showing a construction in which one-half of the valve mechanism shown in Fig. 2 is dispensed with.

In my Patent No. 410,180, dated September 3, 1889, I have shown and described an apparatus for the same general purpose as that to be described in this specification. In the patented apparatus a valve controlling the elevator motor is operated by a piston, to one side or the other of which water can be admitted at will by means of an "auxiliary valve mechanism." This valve mechanism consists of a duplicate arrangement of apparatus, one part being used when the elevator is to be raised, and the other part being used when the elevator is to be lowered; only one part need be described, it being understood that the other half is the same; each part is made as follows: A cylinder in which there are two valve seats is provided with a stem carrying an induction and an exhaust valve, one valve for each seat, one valve being normally closed, the other being normally open, and an enlarged piston-head connected to said stem and

movable in the cylinder. A second valve called the "primary valve" is controlled by a magnet in a circuit leading to the elevator car and serves when opened by the magnet to admit water behind the piston-head to reverse the position of the two valves on one side or the other of the valve mechanism according as one circuit or the other is closed. The reversal of the two valves in said cylinder closes a normally open passage to the waste water pipe and opens the passage leading to the motor controlling mechanism.

The arrangement above indicated, and which is set forth in the patent, has been found efficient and well adapted to accomplish the purpose for which it was designed. It is, however, open to certain objections, particularly because of the complicated nature of the apparatus.

In the present apparatus the parts are much simplified and reduced in number and certain other changes are made which overcome other objections.

Referring now to Fig. 1, 1 is an elevator well or hoistway.

2 is an elevator car; 3 the hoisting cable leading over a pulley at the top of the way and connecting with any suitable motor, for example, as described in my patent above referred to.

4 is a cylinder in which is a piston 5, the rod of which is connected to a valve or other similar device which controls the elevator motor. This being a well known apparatus and not forming an element of the present invention is not shown in detail.

6 is a cable containing three wires leading from the push-buttons 7, 8 in the elevator car to the magnets 9, 9', which are the valve controlling magnets. Each magnet has an armature 10 on a rod 11, which passes through a watertight stuffing box into the cylinder 12; or the magnet and armature may be supported in a watertight inclosing case 28, in which case the stuffing box will not be necessary. The rod 11 bears loosely in a socket at the end of the valve rod 13, or is otherwise connected with said rod. The valve rod 13 is provided with a single packed

valve 14 adapted to rest on the valve seat 15. On the same rod in the cylinder 12 is a piston head 16 of very nearly the same area as valve 14.

17 is a passage leading from the upper end of cylinder 12 to the space under valve 14 and to the inlet passage 18, to which pipe 19, which is connected with the water supply, leads. It will be seen that this arrangement makes a balanced valve.

20 is a spring slightly overcoming the downward pressure of the water, and normally holding the valve 14 closed.

21 is an outlet pipe leading to the upper side of the piston 5, the corresponding pipe 21' on the other side of the valve apparatus leading to the space below the piston 5.

22 is a waste pipe through which the water flows that has been used in moving the piston 5. In the casting or pipe 23 with which said pipe 22 connects is a sliding valve 24, preferably packed at each end and having limiting stops 25. Two ports 26, 26' are provided in said casting, and are so arranged that when one port is open the opposite port is closed by the single sliding valve which is common to both sides of the valve mechanism.

27', 27'' are plates so arranged as to limit the movement of the sliding valve and having openings for the admission of water.

The operation of this apparatus is as follows: Suppose that the last movement of the car was from the bottom of the well to the position shown in Fig. 1, and that it is desired to ascend still farther; the operator will close the circuit at 7, energizing the magnet 9 and directly moving the main valve 14, allowing water to pass from the space 18 to pipe 21 moving the piston 5 down and starting the motor in the proper direction to raise the elevator. It will be seen that the water must all pass to pipe 21 since the port 26 leading to pipe 22 is closed, and when the elevator comes to rest this port is still maintained closed. When it is desired to descend, the other circuit closer, 8, is operated energizing the magnet 9'. This opens the main valve on the opposite side and admits water to the space below the piston 5, starting the motor in the proper direction to lower the elevator. When water first passes from the space 18' through the valve thus opened, a part of the water will enter the perforations in plate 27' and will move the sliding valve to the left opening port 26 and closing port 26', and said valves will retain this position when the elevator comes to rest.

While I have described 4, 5 as a cylinder and piston, any other suitable fluid motor may be substituted.

It will be seen that in the apparatus which I have described I entirely dispense with a "primary valve" operated by a magnet for controlling the admission of water to operate

main induction and exhaust valves, and in place thereof I substitute a balanced main valve having a single seat and valve, and I operate said valve directly by the magnet. I also dispense with the normally open exhaust valve carried by the main valve stem, as described in my patent above referred to.

In Fig. 3 only one magnet and a single valve are shown. 19 is the inlet pipe and 21 the outlet pipe extending to any suitable apparatus to be operated by the water, such as a valve controller; the operation of this valve will be clear without further description. The several parts of the valve are lettered to correspond with Fig. 2.

Having thus described my invention, what I claim is—

1. The combination with a cylinder and piston or a similar motor, and pipes leading to the opposite sides of the piston, of an apparatus for controlling both of said pipes, consisting of a duplicate valve mechanism, each part consisting of a cylinder having a single valve seat, a valve for said seat, an armature connected with the valve, a magnet in operative relation to the armature and in a suitable circuit, said valve controlling the passage between the water supply and the motor, a waste pipe and a valve in the waste-pipe common to both valve mechanisms, substantially as described.

2. The combination with a cylinder and piston or a similar motor, and pipes leading to the opposite sides of the piston, of an apparatus for controlling both of said pipes, consisting of a duplicate valve mechanism, each part comprising a cylinder having a single valve seat, a valve for said seat, an armature connected with the valve, a magnet in operative relation to the armature, said valve controlling the passage between the water supply and the motor, and a waste pipe a valve in the waste-pipe common to both valve mechanisms, the waste-pipe valve having two ports, one of which is opened as the other is closed, substantially as described.

3. The combination with a cylinder and piston or a similar motor, and pipes leading to opposite sides of the piston, of an apparatus for controlling said pipes, consisting of a duplicate valve mechanism, each mechanism consisting of a cylinder having a single valve seat, a valve therefor, an armature connected to the valve, a magnet in operative relation to the armature, a waste pipe and a slide valve in the waste-pipe common to both valve mechanisms and moved by water pressure, substantially as described.

4. The combination with a cylinder and piston or a similar motor, and pipes leading to the opposite sides of the piston, of an apparatus for controlling both of said pipes, consisting of a duplicate valve mechanism, each part comprising a cylinder having a single valve seat, a valve for said seat, an armature

connected with the valve, a magnet in operative relation to the armature, said valve controlling the passage between the water supply and the motor, a waste pipe and a valve
5 in the waste-pipe common to both valve mechanisms, the waste-pipe valve having two ports, the port leading to the waste-pipe remaining closed at the side of the valve mechanism last

used until the opposite side is used, substantially as described. 10

This specification signed and witnessed this 13th day of December, 1890.

CHARLES EDWARD ONGLEY.

Witnesses:

CHARLES M. CATLIN,
J. A. YOUNG.