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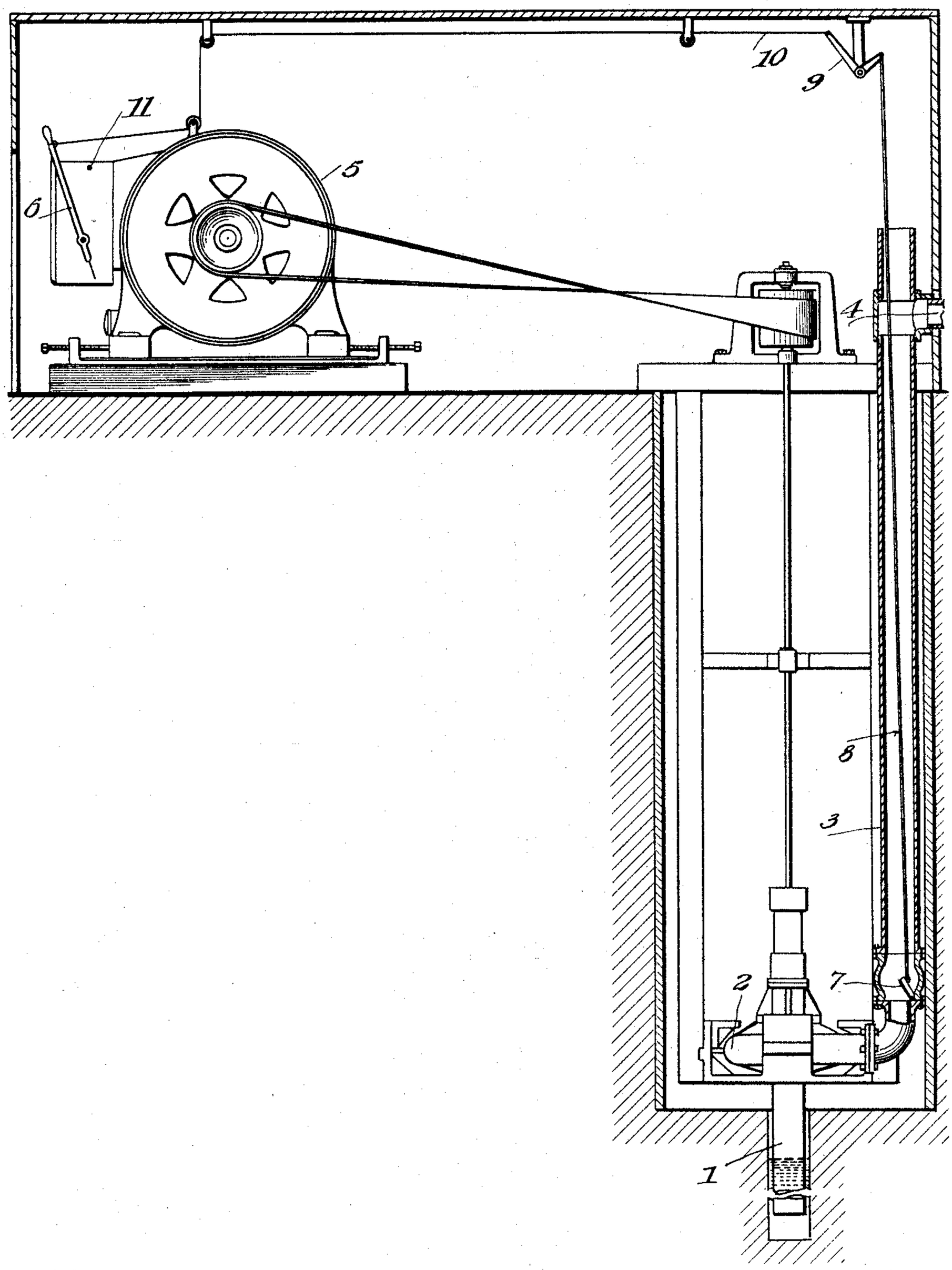
W. E. HOUSTON.

MOTOR CONTROLLER.

APPLICATION FILED JUNE 14, 1905.



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UNITED STATES PATENT OFFICE.

WILEY E. HOUSTON, OF SANTA ANA, CALIFORNIA.

MOTOR-CONTROLLER.

No. 812,791. Specification of Letters Patent. Patented Feb. 13, 1906.

Application filed June 14, 1905. Serial No. 265,275.

To all whom it may concern:

Be it known that I, WILEY E. HOUSTON, a citizen of the United States, residing at Santa Ana, in the county of Orange and State of California, have invented new and useful Improvements for Automatically Cutting Off the Current of Electric Motors when Used in Pumping Water when from any Cause the Motor is Stopped, of which the following is a specification.

In pumping water where an electric motor is used for operating the pump it often happens that there are interruptions in the flow of the current to the motor, thereby causing temporary stoppages of the motor, which occasion the stoppage of the pump, and stopping the flow of the ascending column of water. When the current is again turned on, unless the same is turned on gradually the fuses are almost invariably blown out, and sometimes the motor itself is burned out.

My invention relates to means for automatically cutting off the current to the motor whenever the flow of the column of water from the pump stops; and the object thereof is to require the starting of the motor manually, so that the pressure may be gradually thrown thereon. I accomplish this object by the mechanism described herein and illustrated in the accompanying drawing, which is a side elevation, partly in section, of mechanism illustrating my invention.

In the drawing, 1 is the suction-pipe of the pump. (Shown as a centrifugal pump.)

3 is the delivery-pipe, which carries the water from the pump to the delivery-spout 4.

5 is an electric motor by means of which the pump is operated.

6 is the controlling-lever, by means of which the speed of the motor is varied and is stopped and started.

In the delivery-pipe, and preferably near the bottom thereof, is a valve 7 (shown as a clack-valve) which is connected by the wire or rod 8 to one arm of bell-crank lever 9. The other arm of bell-crank lever 9 is connected by cord 10 to the controlling-lever.

In the operation of pumping water the valve and controlling-lever will be in the position shown in the drawing. In case the current is from any cause cut off from the motor the column of water in the delivery-pipe will cause the clack-valve to close, thereby throwing connecting mechanism, drawing the controlling-lever against stop-pin 11, in which position the current is permanently cut off from the motor, and in order to start the operation of pumping again it is necessary for the operator to start the motor by means of the controlling-lever, which he does in the usual manner, so as not to throw the whole current upon the motor at the start. By this construction all danger of a sudden excess of current being thrown upon the motor is avoided. I have shown the pump as a centrifugal pump; but any other kind of pump may be used, providing the delivery-pipe is provided with a valve that will close on the stoppage of the upward flow of the water therein with sufficient power to move the lever or switch which controls the flow of the current to the motor, suitable connections being made therebetween.

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

1. In combination an electric motor; a pump having a delivery-pipe; a valve in the delivery-pipe adapted to check the downward flow of water therein; means for controlling the flow of the current to the motor; and means connecting said valve with said controlling means, whereby when the upward flow of the water in the delivery-pipe is stopped the valve closes and the current-controlling means cuts off the current to the motor.

2. In combination an electric motor; means for controlling the flow of the current to the motor; a pump having a delivery-pipe; a valve in the delivery-pipe adapted to check the downward flow of water therein; a bell-crank lever above the top of said delivery-pipe; a connecting-rod connecting one arm of said bell-crank lever to said valve; and a connection between the other arm of said bell-crank lever and the means controlling the flow of current to the motor whereby when the upward flow of the water in the delivery-pipe is stopped the valve closes and the current is cut off the motor.

In witness that I claim the foregoing I have hereunto subscribed my name this 8th day of June, 1905.

WILEY E. HOUSTON.

Witnesses:
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