

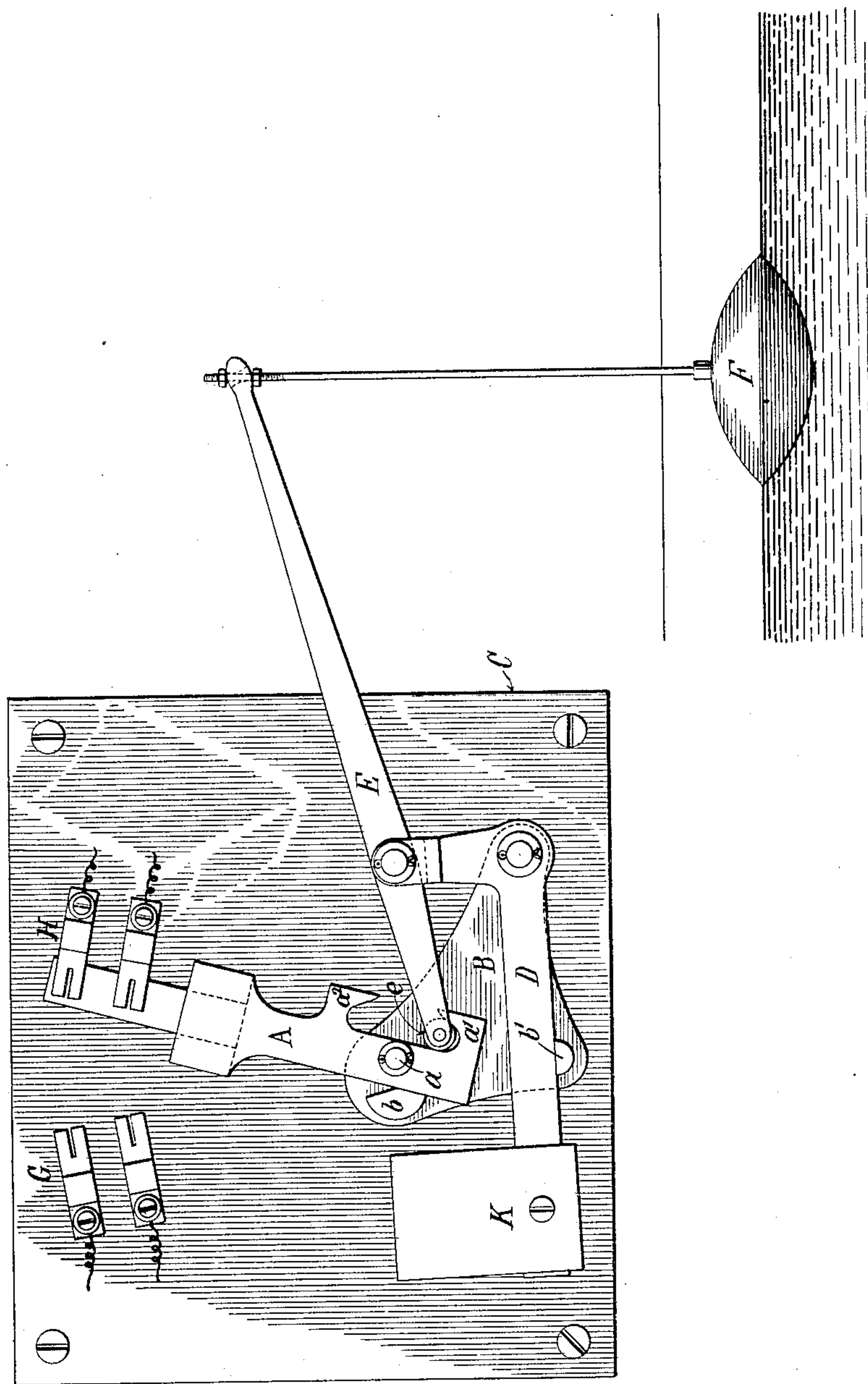
No. 751,174.

PATENTED FEB. 2, 1904.

W. F. IRISH.  
ELECTRIC SWITCH.

APPLICATION FILED JULY 23, 1902.

NO MODEL.



Witnesses:

*Raphaël Ketter*  
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by *E. M. Bentley* Atty

# UNITED STATES PATENT OFFICE.

WILLIAM F. IRISH, OF EAST ORANGE, NEW JERSEY.

## ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 751,174, dated February 2, 1904.

Application filed July 23, 1902. Serial No. 116,628. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. IRISH, a citizen of the United States, residing at East Orange, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Electric Switches, of which the following specification and accompanying drawing illustrate one form of the invention which I now regard as the best out of the various forms in which the invention may be embodied.

My invention relates to an electric switch, particularly one designed to be thrown automatically and positively in one direction or the other to close either of two circuits. It may be operated by hand or by any other means; but I have shown it for illustration as worked by a float in a tank, which will throw the switch at either the high or the low water point, and so stop or set in action a motor driving a pump or may simply ring an alarm to indicate the water-level. The electrical apparatus to be controlled is not shown, it being no part of the present invention.

In the drawing, A is a switch-blade representing the moving member of a switch, pivoted at *a* to a plate B on a base C and engaging the contacts G or H, according to its position. It is stopped at each end of its throw by a beveled pin *b* and is operated by a lever E, (which is shown as controlled by a float F,) carrying at its tip a friction-roller *c*, which thrusts against the blade A either above or below its pivotal point *a* and is stopped by engagement with either the hook *a'* or the opposite hook *a''*. The operating-lever E is pivoted to one arm of an elbow-lever D, which carries on its other arm an adjustable weight K. The weight tends to give lever E its thrust against the switch-blade, the movement of the blade to left or right simply depending upon the thrust being applied above or below the center or pivotal point *a*. In the drawing it is shown as applied below and the switch-blade is thrown to the right. If, however, it is assumed that the float F drops by a fall in the water-level, its weight will carry with it the outer end of lever E, whose inner end will ride up along the switch-blade A (the weight F being thereby lifted slightly to allow of the lever E moving bodily to the right) until it passes the center *a*, when the weight K will

exert its force through lever E above the center *a*, and so press the blade A to the left. In this movement (which is positive and definite) 55 the blade parts from the contacts H and engages the contacts G, where it will remain until by a rise in the water-level the reverse action takes place and the blade is suddenly and sharply thrown back to the position shown in 60 the drawing. The weight K may, if desired, be replaced by a spring.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a switch-blade of 65 an operating-lever adjustably applied thereto on either side of its pivotal point, a second lever carrying the operating-lever and a weight acting on the said second lever.

2. The combination with a switch-blade of 70 an operating-lever therefor adjustably applied thereto on either side of its pivotal point, a weighted lever pressing said operating-lever against the switch-blade and means for shifting the point of application of the operating- 75 lever with relation to the pivotal point of the switch-blade.

3. The combination with a switch-blade, of an operating thrust-lever, a second lever pivoted at one end to the operating-lever, a weight 80 on the other end of the second lever and means for directing the operating-lever against either side of the pivotal point of the switch-blade.

4. The combination with a switch-blade of an operating-lever, an elbow-lever having one 85 arm pivoted to the operating-lever and a weight applied to the other arm.

5. The combination with a switch-blade, of two contacts engaged thereby alternately, an operating-lever applied to said switch-blade 90 adjustably with respect to its pivotal point, an elbow-lever pivoted on one side to the operating-lever and provided on the other side with a weight, and a float controlling the operating-lever with respect to both the elbow-lever 95 and the switch-blade.

In witness whereof I have hereunto set my hand, before two subscribing witnesses, this 15th day of July, 1902.

WILLIAM F. IRISH.

Witnesses:

L. T. SHAW,  
S. P. CLARK.