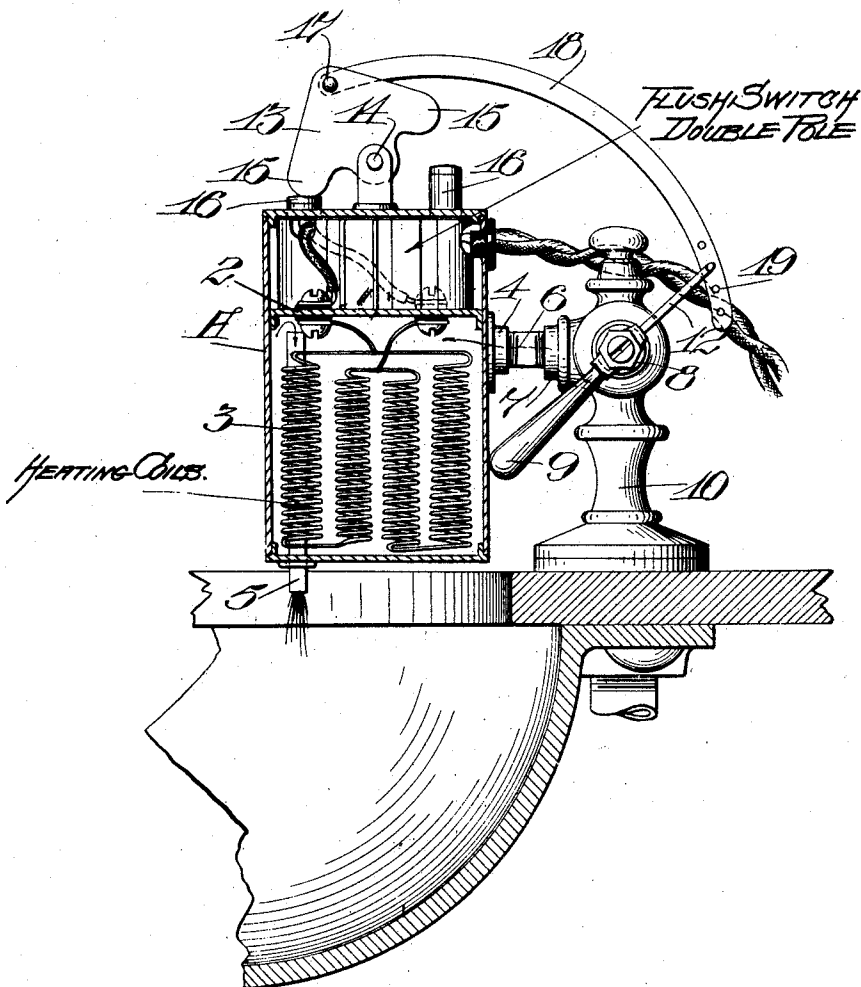


L. KATZ.
ELECTRICAL WATER HEATER.
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1,011,809.

Patented Dec. 12, 1911.



Witnesses.
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UNITED STATES PATENT OFFICE.

LOUIS KATZ, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF TO ROBERT DAVIES, OF SAN FRANCISCO, CALIFORNIA.

ELECTRICAL WATER-HEATER.

1,011,809.

Specification of Letters Patent.

Patented Dec. 12, 1911.

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To all whom it may concern.

Be it known that I, LOUIS KATZ, a citizen of the United States, residing at the city and county of San Francisco and State of California, have invented new and useful Improvements in Electrical Water-Heaters, of which the following is a specification.

My invention relates to improvements in electrical water heaters and particularly in connection whereby the flow of water will be instituted through the heating mechanism, or cut off therefrom in such relation that the heating elements will be amply protected by water before and during the time while the electrical current is flowing.

It consists in the combination of parts and details of construction, which will be more fully explained by reference to the accompanying drawings, in which the figure is a partial section and elevation of my apparatus.

It is the object of my invention to construct a cheap and effective means for heating a current of flowing water, and to insure the heating mechanism being always protected by a body of water while the electrical current is flowing.

In carrying out my invention I form a casing A, which may be made of ordinary tubing, having suitable closures at the end and an intermediate diaphragm 2, which serves to separate the water heating space and mechanism, from the switch mechanism.

The water heating portion consists of a series of coils of wire 3, which may be of naked wire with the coils so separated that the electrical current will be forced to pass through the length of the coil and not be short circuited. These coils may be arranged in any suitable or desired manner, as indicated, and connection is made between the coils and the switch through which an electrical current may be transmitted to energize the coils. As these coils are made with a certain resistance to the passage of the electrical current, a sufficient amount of heat will be developed in them to heat the water which may be passed through the coil containing chamber.

In the present case I have shown the casing A having an inlet passage at 4 on one side near the top and a discharge passage through the bottom, as at 5. In order to connect the device with the source of supply,

I have shown a short right and left threaded tube, 6, one end of which screws into the end of the nipple, 4, upon the casing, A, and the other may be simultaneously screwed into the nipple 7 of a faucet 8 of any suitable or desired description.

In the present case I have shown what is termed a "Fuller" cock having an operating lever or handle 9 and the standard 10 of such a cock is here shown as fixed to one side of a wash basin 11; this being the normal position of such water cocks. It will then be seen that by connecting the nipples 4 and 7 by the short piece of tubing 6, the apparatus will be conveniently located with relation to the basin. In order to open the water supply and to close the electrical circuit simultaneously, I have shown an extension 12 of the handle 9 and a heart-shaped lever 13 fulcrumed to a standard 14 on the casing and having its divergent ends adapted to contact with push buttons 16 of that class of switch known as the "double pole flush switch". The remaining upwardly extending angle 17 of the part 13 is connected with the arm 12 by means of a connecting rod or link 18 which is curved into a segmental arc, as shown, so as to most effectively transmit the movement of the lever to the switch actuating member. The arm 18 may be perforated with holes, as at 19, so that the end of the connecting arm 12 may be adjusted to any of the holes and thus lengthen or shorten the lever 18, so as to vary the opening and closing of the water supply and the switch.

It will be manifest that in order to protect the apparatus from injury, it will always be necessary to have a body of water flowing through the heating chamber while the electric current is flowing, and this position of the connecting link is such that the water will commence to flow an instant before the electrical circuit is closed and will continue to flow an instant after the parts are moved to close the electrical switch. The arm is also so disposed that, if desired, the water cock will be opened shortly before the electrical circuit is closed and thus a supply of cold water may be passed through the apparatus, if desired.

By this construction I am enabled to provide a very economical and effective heating device and to so reduce the mechanism inter-

mediate of the water cock and the electrical switch that it will be cheap and little liable to get out of order.

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

1. The combination with a cock having an actuating lever, a casing, and an electrical heating coil, of a double pole flush switch located in the casing having push buttons extending through the top, a triangular lever fulcrumed between the buttons with two of its angles adapted to contact with and alternately depress the buttons, a curved link having one end pivoted to the third angle of the lever, and an extension of the cock actuating lever with which the other end of the link is connected.

2. The combination with a cock having an

actuating lever, a casing, and an electrical heating coil, of a double pole flush switch located in the casing having push buttons extending through the top, a triangular lever fulcrumed between the buttons with two of its angles adapted to contact with and alternately depress the buttons, a curved link having one end pivoted to the third angle of the lever, an extension of the cock actuating lever with which the other end of the link is connected, and means to vary the length of the connecting link.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

LOUIS KATZ.

Witnesses:

THOS. CASTBERG,
F. E. MAYNARD.