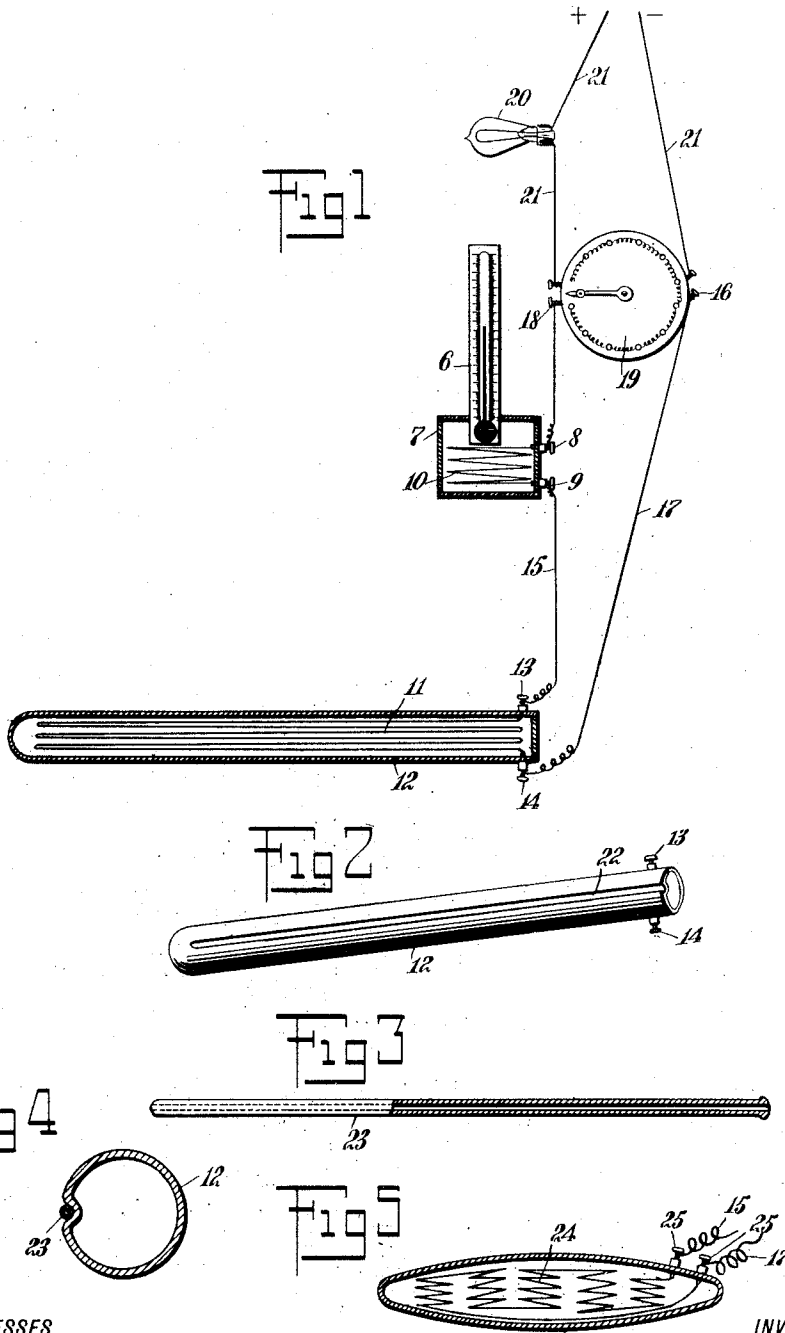


J. A. FULTON.
SURGICAL IMPLEMENT.

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1,011,607.

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WITNESSES
C. J. Hachentug
E. M. M. Co.

INVENTOR
Jacob A. Fulton
BY
M. M. Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

JACOB ARTHUR FULTON, OF ASTORIA, OREGON.

SURGICAL IMPLEMENT.

1,011,607.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JACOB A. FULTON, a citizen of the United States, and a resident of Astoria, in the county of Clatsop and State of Oregon, have invented a certain new and useful Surgical Implement, of which the following is a full, clear, and exact description.

Among the principal objects of the present invention are: to provide an instrument for local application of heat for the therapeutic treatment of disease; to provide an appliance for controlling the applied heat, and for regulating the same; and to provide means externally visible, whereby the heat internally applied is accurately disclosed.

One embodiment of the present invention is disclosed in the construction illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a diagrammatic view of an instrument constructed and arranged in conformity with the present invention; Fig. 2 is a perspective view of a casing for the heating coils, adapted for internal insertion; Fig. 3 is a side view, partly in section, of a medicinal applicator, used in connection with the casing illustrated in Fig. 2; Fig. 4 is an enlarged cross section of the casing illustrated in Fig. 2, having positioned thereon the applicator illustrated in Fig. 3; and Fig. 5 is a cross section in diagram of a heating pad for external application.

In many cases, it is desired to locally treat by heat applications, internal surfaces of the human body. Heretofore an objection has arisen in that the applications have been attended by the risk of over-heating and thereby inflicting injury to the very delicate membrane usually covering the surface of the parts thus treated. This objection is obviated in the present invention, which employs a thermometer, 6, of suitable construction, the bulb whereof is incased within a box 7. The box 7 is provided with two terminal binding posts 8, 9. These terminal binding posts form the terminals of a resistance coil 10, disposed within the box 7. The resistance coil 10 is placed in circuit with the resistance coil 11, which is mounted lengthwise of the tube 12, substantially as illustrated in Fig. 1 of the drawings.

The coil 11 is provided with terminal binding posts 13 and 14, the former of which is connected by means of the wire 15,

with the binding post 9, of the coil 10. The binding post 14 is connected to the binding post 16 by means of the wire 17. The binding post 16 and the binding post 18 form the terminals of the operating circuit of the rheostat 19. The rheostat 19 is placed in circuit with the lamp 20, by means of the wires 21, 21, which are connected to a suitable connection plug of the street, or other electric service.

The laminations of coils of wire which constitute the heating element within the tube 11, are electrically separated by any known and sufficient means. The wire employed may be of any approved make, that preferred by me being a good quality of German silver.

In Fig. 2 of the drawings, I have shown the casing 11 as having a groove 22, formed in the external side thereof. This groove is intended to receive and hold the applicator 23. It is also intended to receive and hold a small thermometer, when desired. The applicator 23 is a small tube, through the central opening in which may be forced medicine when desired. When heat applications alone are being made, the applicator 23 is not employed. When medicating accompanies the heat treatment, the applicator is laid within the groove 22 prior to the same being inserted.

The pad illustrated in Fig. 5 has the arranged coils 24 located therein. These may be constructed from any suitable material, and arranged in any known and approved manner for electrically separating the laminations or convolutions of the wire. The heating coils are provided with the binding posts 25, 25, to receive the wires 15 and 17, when this pad is used in connection with the rheostat 19 and the thermometer 6.

The instruments to which heaters constructed in accordance with this invention may be applied, are generally those which are designed for insertion in the orifices of the human body.

With an instrument thus constructed and placed in operative position, the acting physician or patient having previously ascertained the relative heating capacity of the two coils 10 and 11, adjusts the rheostat 19 to permit more or less current to pass through the said coils to raise or lower the temperature as desired. In this operation the thermometer 6 registers the quantity of heat due to the heating of the coil 10, and

thereby appraises the operator of the degree of heat produced in the coil 11, the ratio between the heating capacities of the two coils being known, as stated.

5 The introduction of the lamp 20 in the receiving circuit of the rheostat 19 is an old and well-known expedient.

10 Having thus described my invention, I claim as new and desire to secure by Letters Patent:

15 1. A surgical implement comprising a hollow instrument for internal insertion, having an external groove adapted to hold a medicinal applicator; an applicator adapted to rest within said groove and to have transmitted through the same a suitable medicine; an electrical heating coil within said hollow instrument; an electric circuit connected with the terminals of said coil and
20 with an electric source; an interposed heating medium, disposed in said circuit; and an exposed thermal register mounted in juxtaposition with said heating medium to indicate the heat radiated from said coil in said hollow instrument.

25 2. A surgical implement comprising a hollow tube shaped for insertion in the cavities of the human body; an electric heating coil disposed in said tube; a second electric heating coil having a thermal-activity of known relation to that of the first mentioned coil; an exposed register to indicate the heat radiation of said first mentioned coil; and an electric circuit embodying a controlling device and both of the said heating coils in series.

30 In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JACOB ARTHUR FULTON.

Witnesses:

JOSIAH WEST,
W. M. VAN DUSEN.