

Oct. 7, 1930.

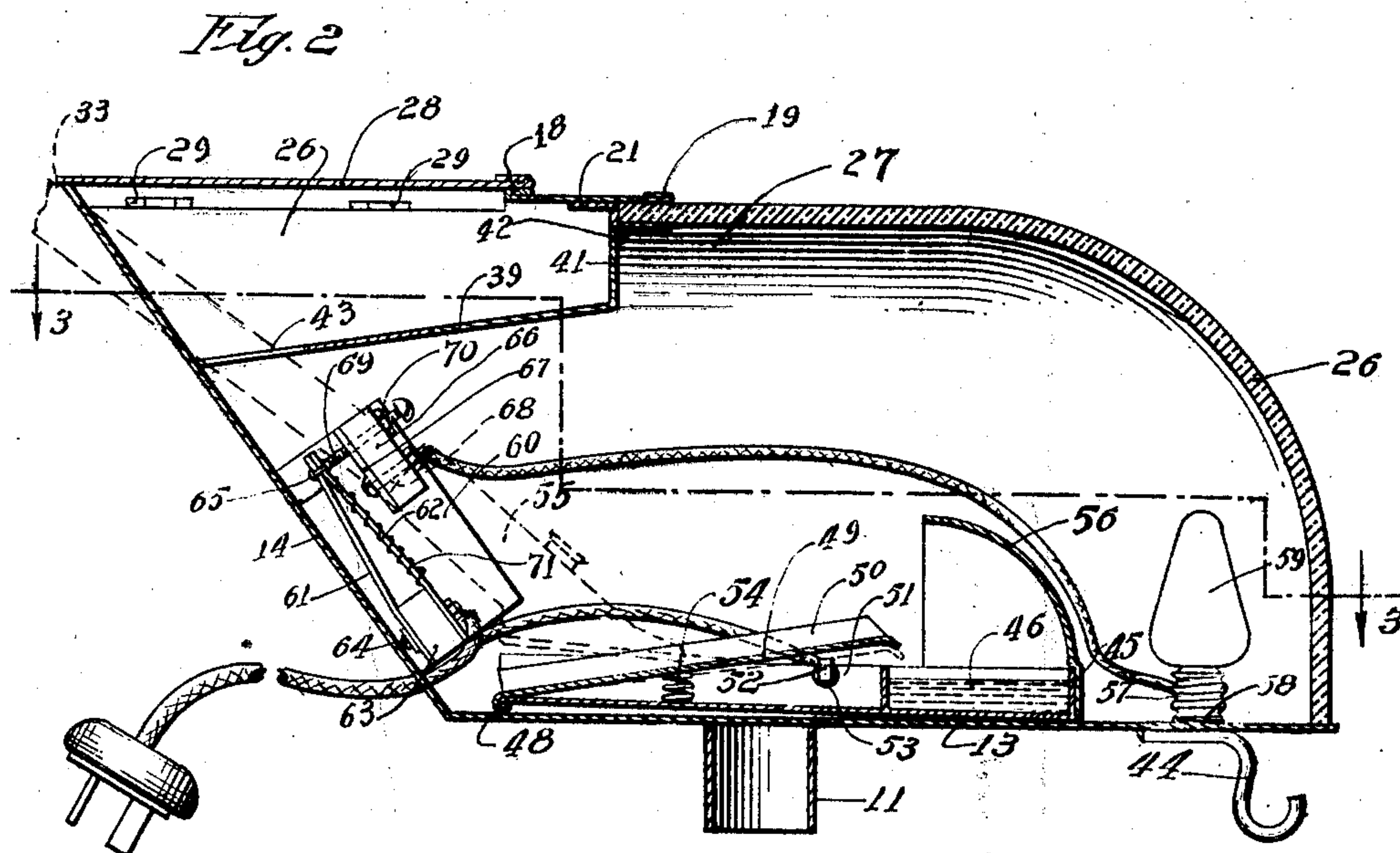
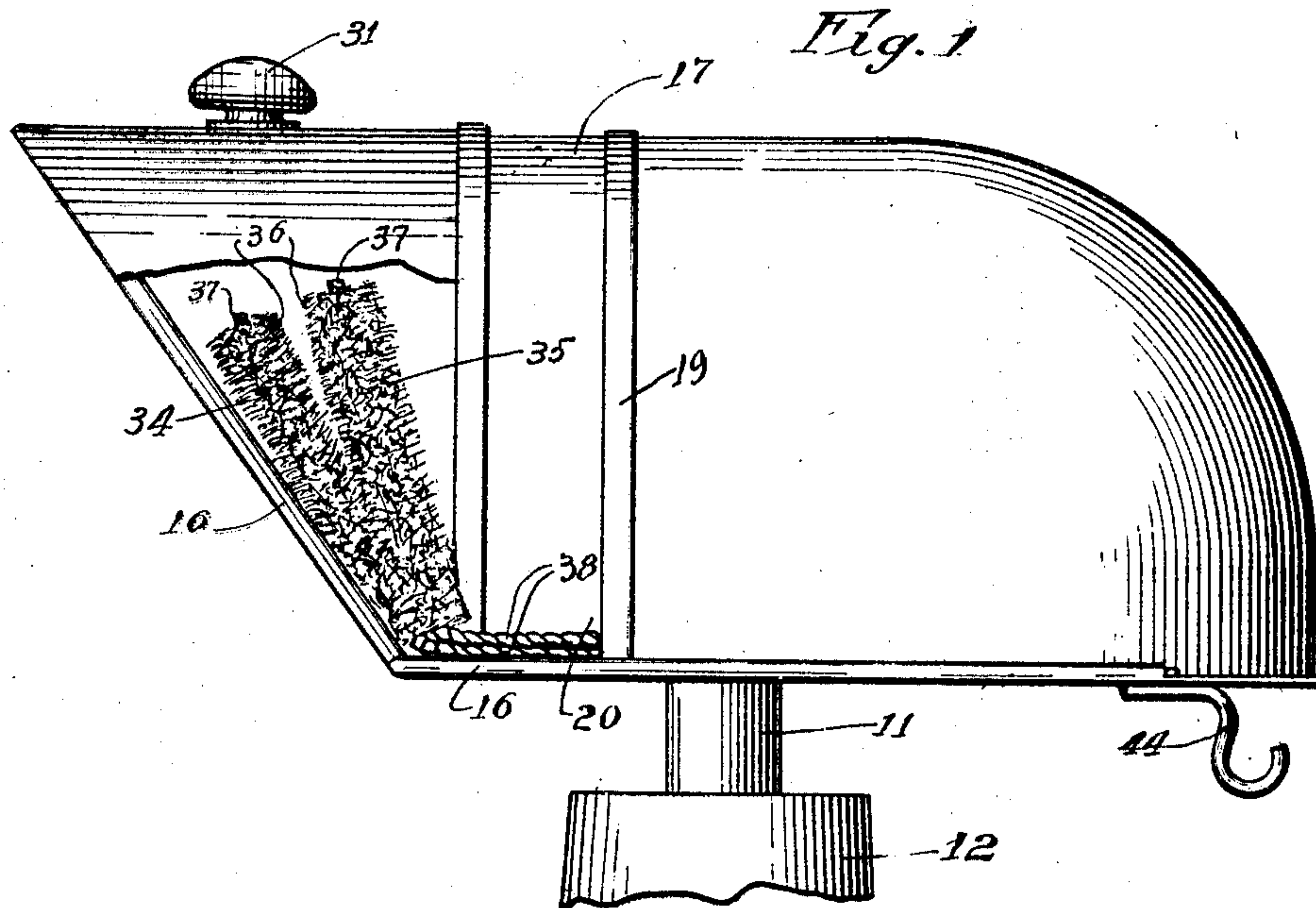
R. GOODWIN

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STERILIZER FOR CLIPPERS

Filed March 5, 1927

2 Sheets-Sheet 1



Inventor:
Roy Goodwin
By: Williams, Bradbury,
McCall & Hinkle
Atty's

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Fig. 3

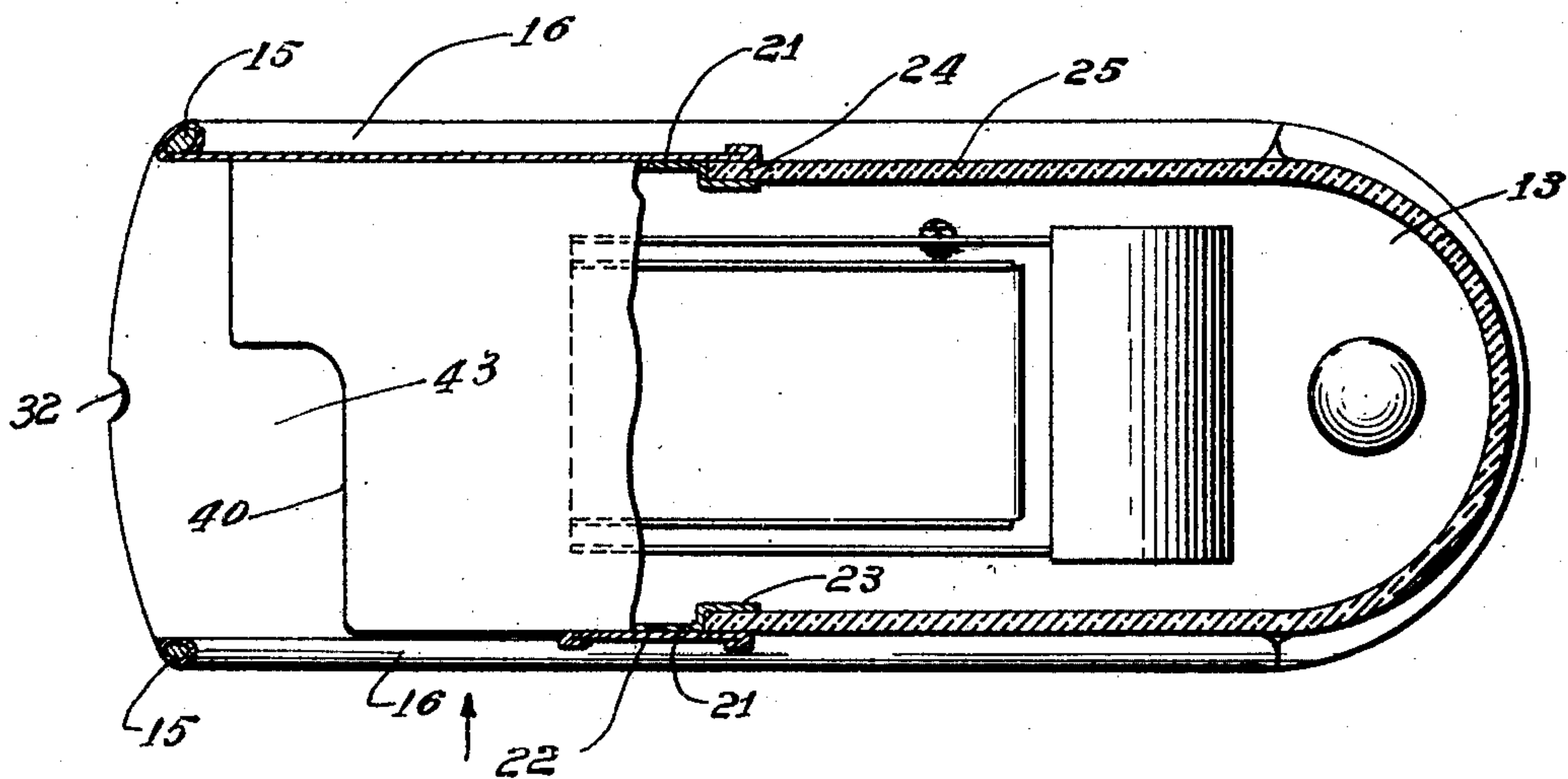
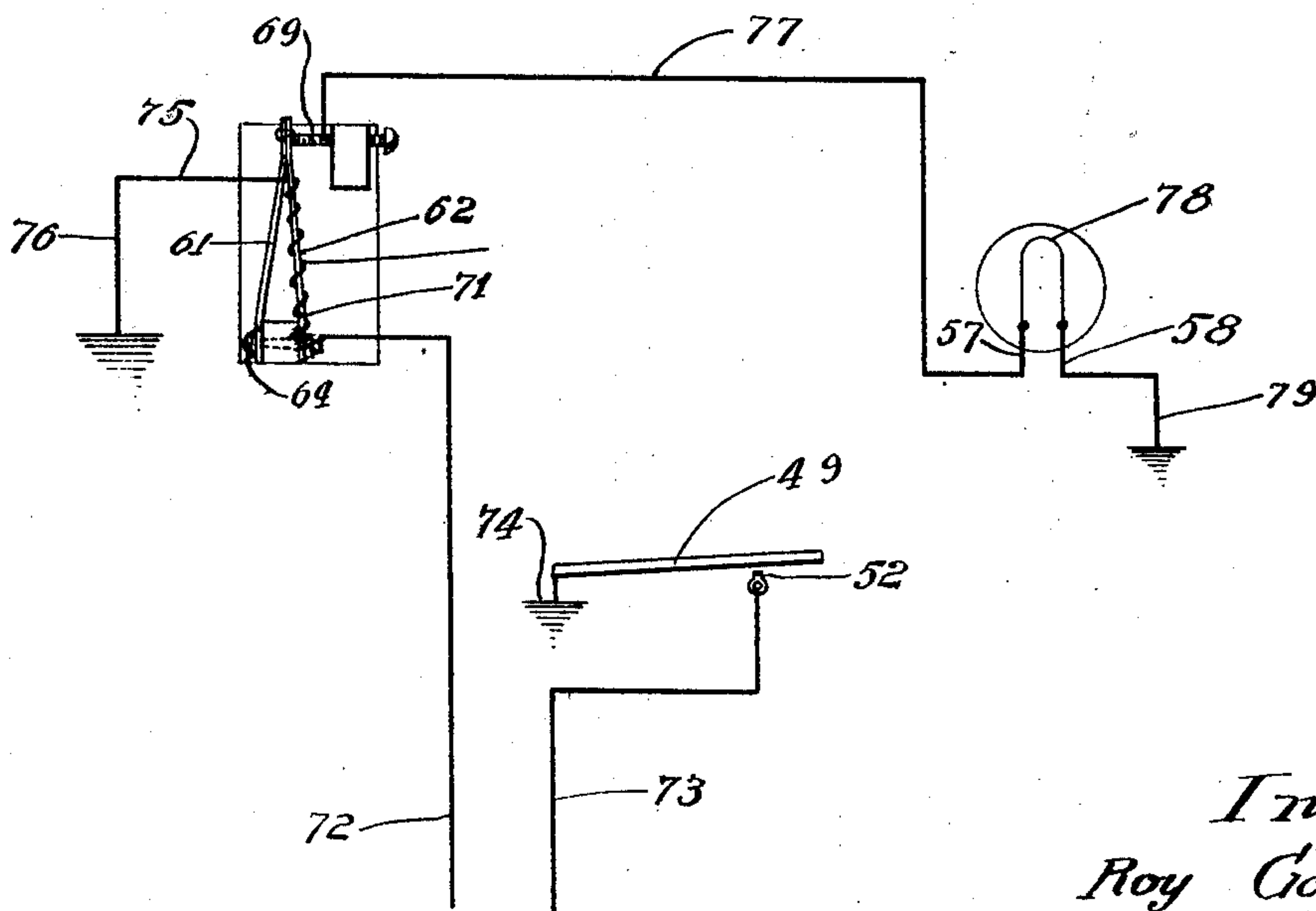


Fig. 4



Inventor:

Roy Goodwin

*By: Williams, Bradbury,
McCall & Hinkle*

Attys

UNITED STATES PATENT OFFICE

ROY GOODWIN, OF WILMETTE, ILLINOIS

STERILIZER FOR CLIPPERS

Application filed March 5, 1927. Serial No. 173,147.

My invention relates to sterilizers, being more particularly concerned with the provision of a sterilizer especially adapted to be used in barber shops for hair clippers.

One of the objects of my invention is the provision of a sterilizer for hair clippers having means for the removal of foreign matter from the clipper, such as hair, dandruff, etc. by the act of the insertion of the clipper in the sterilizer.

Another object of my invention is the provision of a sterilizer of the class described, including positive means to assure this cleansing operation during the insertion of the clipper, means for providing a sterilizing atmosphere within the sterilizer, means for indicating the operation of the sterilizer during a predetermined period of time, and means responsive to the insertion of a clipper for actuating said indicating means and for vaporizing a sterilizing fluid.

Other objects and advantages of my invention will appear more fully from the following description and from the accompanying drawings in which similar characters of reference indicate similar parts throughout the several views.

Fig. 1 is an elevational view in partial cross-section showing my sterilizer;

Fig. 2 is an elevational longitudinal cross-sectional view of the same;

Fig. 3 is a plan view in partial cross-section taken on the line 3—3 of Fig. 2; and

Fig. 4 is a diagram of the electrical circuits employed in my sterilizer.

Referring to Fig. 1, 10 indicates in its entirety my sterilizer which may be provided upon its base with a ferrule 11 adapted to receive a projecting boss upon the motor stand 12 usually employed in barber shops for supporting the motor of an automatic hair clipper. In order to provide a motor support, the base 13 of my sterilizer may be provided with a hook 44 upon which the motor of the automatic sterilizer may be supported. The

hook 44 comprises a short piece of wire bent in the conformation shown and fixed to the base 13 by solder or other convenient fastening means.

My sterilizer comprises a closed receptacle which may consist of a flat base 13 of substantially the outline shown in Fig. 3, having one end upwardly bent as at 14 to form a sloping end wall for the same.

The base 13 may be provided at its edges with a reinforcing wire 15 supported upon said base by turning the extreme edges of said base about said wire, forming a substantially circular bead 16 along each edge. The supporting ferrule 11 may be soldered or otherwise permanently fixed to the base 13, being preferably substantially centrally located so as to support the sterilizer in a balanced position.

The upper framework of the sterilizer may consist of a substantially semi-circular strip of metal 17 having its edges 18 and 19 flanged over to reinforce the same and to provide a rounded edge. The strip 17 is preferably of substantially rectangular shape at its forward end 20 as shown in Fig. 1, while the rear end as shown in Fig. 2, has a projecting triangular portion 26 which reaches back to the sloping portion 14 of the base and is fixed thereto by solder or other permanent fastening means to form that side of the container. The triangular portion 26 terminates at a straight edge 27 which is adapted to pivotally support a cover further to be described. The strip 17 may be secured to the base 13 by riveting, soldering or otherwise permanently affixing its ends 20 to the opposite side of the base 13, at an intermediate position inside the bead 16. The framework 17 is provided upon its inside with a plurality of small metal clips 21 comprising short strips of sheet metal having two bends at right angles to form a flat portion 22 and an offset portion 23. The flat portions 22 of the clips 21 are soldered or otherwise permanently affixed to the interior of

the frame piece 17 after the manner shown in Figs. 2 and 3 so as to provide a plurality of grooves which are adapted to receive the edge 24 of the transparent cover 25.

5 The cover 25 comprises a transparent member preferably constructed of glass, having a lower edge which is adapted to fit within the bead 16 and effect substantial closure with the base 13 of the receptacle. In the illustration shown the end of the sterilizer base 13 is substantially circular. Hence the cover 25 has its end formed like a portion of the surface of a sphere, the other end approaching the shape of a portion of a cylinder and being adapted to fit within the edge 19 of the frame piece 17 to completely close the end of the sterilizer.

In order to close the left end of the sterilizer the curved wall 26 pivotally supports a curved cover plate 28 of substantially triangular form, by means of hinges 29 and it will be observed that the cover plate 28 is curved to fit along the edges of the beads 16 and the flanged edge 18, thereby providing a closure for this end of the container. The cover 28 may likewise be provided with a crimped edge to provide a rounded edge and with a knob or handle 31 for the purpose of facilitating the opening of this member.

30 My sterilizer is adapted to be used with clippers of all kinds, including manual clippers, but for the purpose of adapting the same to be used with automatic clippers, the base 14 is preferably provided with an aperture 32 through which the shaft 33 of the automatic clipper may extend when the clipper is in the position shown in Fig. 2. The sterilizer is preferably provided upon the side which is adapted to be closed by the cover 28 with a pair of brushes 34 and 35 having opposed bristles 36 through which the clipper is passed during its insertion into the sterilizer for the purpose of removing foreign matter from the clipper, such as hair, dandruff, etc. The brushes 34 and 35 are so located that they do not interfere with the complete closure of the sterilizer by means of the cover 28 and although the brushes shown consist of bristles supported between a plurality of twisted wires, it will be obvious that brushes of different structure may be substituted. The brushes 34 and 35 supported upon the wires 37 may be conveniently affixed within the casing by soldering the lower ends 38 of the wires to the framework adjacent the bead 16.

In order to assure the insertion of the clipper into the sterilizer in the manner contemplated so that the foreign matter will be removed therefrom by the brushes, my sterilizer may be provided with an auxiliary cover member 39 comprising a substantially rectangular piece of sheet metal having one corner cut away as at 40 and having an upwardly extending flange 41 pivotally supported

upon the frame of the sterilizer by the hinge 42. The auxiliary cover 39 in its normal position may rest with its end against the sloping base 14 and the slot 43 provided between the base and the cover should be of such size that it will readily permit the insertion of the shank or shaft 33 of the clipper in a lateral direction as shown by the arrow in Fig. 3 but will not permit the insertion of the clipper from above. It will thus be observed that the auxiliary cover 39 will permit the insertion of the clipper through the brushes 34 and 35 and upon removal of the clipper it may be drawn upward, pivotally opening the auxiliary cover 39 by contact with the lower portion of the clipper. During this operation the cover 28 is of course opened by means of the knob 31 after which it should be reclosed. After the clipper has been removed, the cover 39 will drop again to the position shown in Fig. 2 after which the sterilizer is again ready to receive a clipper to be sterilized.

The sterilizer 10 is provided in its interior with a reservoir 45 consisting of a small sheet metal receptacle affixed to the base 13, and the reservoir 45 is adapted to receive a sterilizing liquid 46 such as carbon tetrachloride or any germicide which is adapted to provide a sterilizing atmosphere when evaporated. The base 47 of the reservoir 45 may be extended to form a hinge 48 for pivotally supporting a table 49 consisting of a sheet metal strip having upwardly turned lateral flanges 50, to insure the location of the clipper upon said table. The base 47 may be provided with upwardly turned flanges 51 either one of which may support an electrical contact 52 by means of a screw bolt 53, insulating washers being interposed between said contact and the flange 51 so that the contact is insulated from the framework of the sterilizer. The table 49 is normally spaced from the contact 52 by means of the compression spring 54, but when the clipper 55 is in the position shown in Fig. 2, the table 49 is depressed by the weight of the clipper 55 to make electrical contact with the contact 52.

The base 13 supports at one end adjacent the reservoir 45 an electric light socket comprising a threaded metallic ferrule 57 having an insulated central contact 58 which is in conducting relation with the base 13 of the sterilizer. The socket 57 supports an incandescent bulb 59 which may be colored, preferably red, so as to light the interior of the sterilizer, being visible through the transparent cover 26 without giving any glare. The bulb 59 is preferably of standard lighting voltage and provides a sufficient degree of heat to gradually evaporate the sterilizing fluid 56 and to maintain a sterilizing atmosphere within the receptacle. In order to provide means for receiving the radiant heat energy from the bulb 59 and transmitting the same to the fluid 46, the reservoir

45 may be provided with a curved metallic shield 56 which is in heat conducting relation with said reservoir, being supported thereby. These parts may be fixed together by solder or other convenient fastening means.

The visual indication given by the incandescent bulb 59 is preferably operated only for a predetermined length of time in order to show that the sterilizer is operating and to provide sufficient heat to evaporate a portion of the sterilizing fluid 46 sufficient to supply the losses of sterilizing atmosphere due to the opening of the cover 28. I have therefore provided an automatic thermostatic switch comprising an insulating base 60 which supports a pair of strips of metal 61 and 62 having a high coefficient of thermal expansion. The strips 61 and 62 may be of brass or other metal having a high coefficient of thermal expansion.

The strips 61 and 62 are supported at one end upon the projecting lug 63 of the base 60 by a screw bolt 64 passing through said lug and through both strips and holding these ends in fixed relation. The opposite ends of the strips 61 and 62 are bent towards each other and held in fixed relation by a rivet 65 or other permanent fastening means permitting no sliding motion between these strips. The base 60 is also provided with an upwardly projecting lug 66 having a metallic strip 67 supported thereon by means of a screw bolt 68 which may also serve as a connector. The strip 67 also provides a threaded support for an adjustable contact 69 comprising a screw bolt passing through said strip and provided with a lock nut 70 to hold the same in adjusted position.

In order to provide thermal means for actuating the thermostat, the brass strip 62 is wound with a heating coil 71 comprising a plurality of turns of insulated wire having a high electrical resistance and adapted to heat the strip 62 when the circuit is closed through the contact 52, and the circuits employed in my sterilizer are as follows: The sterilizer may be provided with a flexible connecting cord comprising two conductors 72 and 73 terminating in an ordinary screw plug connector and one conductor 73 may be connected directly with the contact 52. It will be observed that as the metallic table 49 is pivoted directly upon the metallic base 13, this table is grounded upon the sterilizer as shown at 74. The other conductor 72 may be extended to the bolt 64 to which it may be fastened, being placed in electrical connection with said bolt, the strips 61 and 62 and the resistance coil 71. The other end of the resistance coil 71 is connected by a conductor 75 to the metallic portion of the sterilizer, being grounded as at 76. The strips 61 and 62 are normally in contact with the adjustable contact 69 and the adjustable contact

69 is connected by means of the conductor 77 to the threaded ferrule 57 representing one end of the filament 78 of the incandescent bulb 59. The central conductor 58 of the socket 57 representing the opposite end of the filament 78, is supported directly upon the base 13 being thereby grounded as at 79. It will be observed that while I have described the foregoing electric circuits with a grounded system using the metallic portions of the sterilizer as a conductor, that my circuits may readily be modified to provide a system insulated from the sterilizer by providing a second insulated contact upon the table 49 and by insulating the points 74, 76 and 79 from the sterilizer, connecting them by a common conductor.

The operation of my sterilizer is as follows: The strips 61 and 62 are normally in contact with the contact 69 but when no clipper is within the sterilizer, the table 49 will be maintained in spaced relation to the contact 52 by means of a spring 54 thereby breaking the circuit at 52. When the operator has finished using a clipper he may open the sterilizer at the cover 28 by means of the knob 31 and with his other hand insert the clipper 55 with a lateral motion, the brushes 34 and 35 brushing the hair, dandruff and other foreign material from the knives and other parts of the clipper. The limited size of the slot 43 assures the insertion of the clipper with such a lateral motion and the shank of the clipper or the flexible shaft by which it is actuated may be located within the slot 32, the end of the clipper resting upon the table 49. The cover 28 may then be closed about the shaft of the clipper, completely closing the sterilizer.

The weight of the clipper 55 upon the table 49 compresses the spring 54, closing the contact at 52 and establishing the following circuits: The thermostat heating circuit is established through the conductor 73, contact 52, table 49, ground at 74, ground at 76, conductor 75, heating coil 71, bolt 64 and conductor 72. An indicating and heating circuit is established through conductor 73, contact 52, table 49, ground 74, ground 79, filament 78, conductor 77, contact 69, strips 61 and 62, bolt 64 and conductor 72.

As a result, when the clipper is placed upon the table 49 the lamp 59 will be lighted, giving an indication of the operation of the sterilizer and furnishing a limited amount of radiant energy for the evaporation of the sterilizing fluid 49. After a predetermined period of time the heating effect of the coil 71 will expand the brass strip 62, such heating effect having no effect or at least a much lesser effect upon the strip 61 with the result that the expansion of the strip 62 will cause the thermostat to deflect toward the left in Fig. 4, breaking the electrical circuit at the contact 69. The lamp will then be extinguished

but the circuit through the heating coil 71 will continue maintaining the thermostat in circuit breaking relation. It should be noted that the heating coil 71 is of considerable resistance so that the consumption of current by this device is negligible. Upon the removal of the clipper from the sterilizer, the circuit will again be broken at the contact 52 and the thermostat formed by the strips 61 and 62 will cool and return to its normal position against the contact 69.

It will thus be observed that I have provided a sterilizer for hair clippers including means for removing foreign material from the clipper during the insertion of the same in the sterilizer and that I have also provided positive means for assuring such a cleansing operation during the insertion of the clipper. My sterilizer also includes means for providing a visual indication of the operation of the sterilizer and automatic means for limiting such visual indication to a predetermined period of time.

While I have illustrated and described a specific embodiment of my invention, many modifications may be made without departing from the spirit of the invention and I do not wish to be limited to the precise details of construction set forth but desire to avail myself of all changes within the scope of the appended claims.

Having thus described my invention what I claim is new and desire to secure by Letters Patent of the United States is:

1. In a sterilizer for hair clippers, the combination of a receptacle, means for supporting said receptacle upon a motor stand, said receptacle having an opening for the insertion of a clipper, a reservoir in said receptacle, a sterilizing fluid in said reservoir, means for evaporating said fluid, means responsive to the insertion of a clipper to actuate said evaporating means, and means for indicating the operation of said sterilizer for a predetermined period of time.

2. In a sterilizer for hair clippers, the combination of a receptacle having an opening for the insertion of a clipper, brushes located to remove the foreign matter from said clipper during its insertion through said opening, a switch actuated by the placing of a clipper in said receptacle, a sterilizing fluid in said receptacle, and a heater actuated by said switch.

3. In a sterilizer for hair clippers, the combination of a receptacle having an opening for the insertion of a clipper, brushes located to remove the foreign matter from said clipper during its insertion through said opening, a switch actuated by the placing of a clipper in said receptacle, a sterilizing fluid in said receptacle, a heater actuated by said switch, an electric lamp actuated by said switch, and a thermostat actuated by said heater to de-energize said lamp.

4. In a sterilizer for hair clippers, the combination of a receptacle having an opening for the insertion of a clipper, with a reservoir in said receptacle, a sterilizing fluid in said reservoir, means for evaporating said fluid, and means responsive to the insertion of a clipper to actuate said evaporating means.

In witness whereof, I hereunto subscribe my name this 2nd day of March, 1927.

ROY GOODWIN.