B. E. TURNEY.

ELECTRIC MOUTH MIRROR.

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938,525. Patented Nov. 2, 1909.

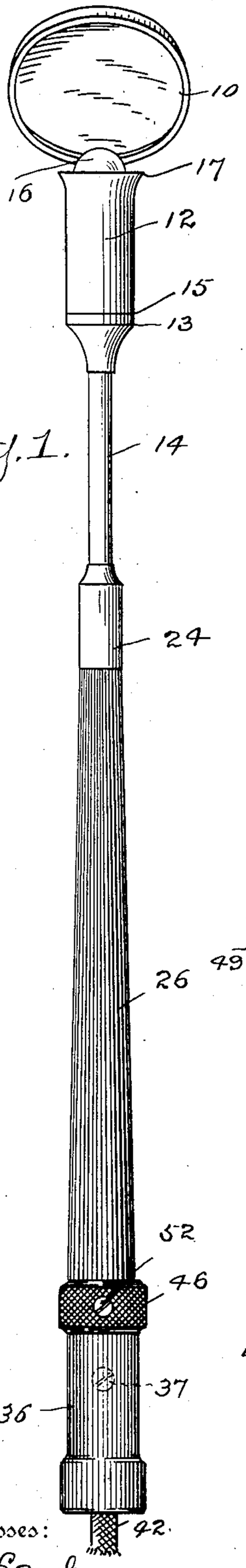


Fig. 1.

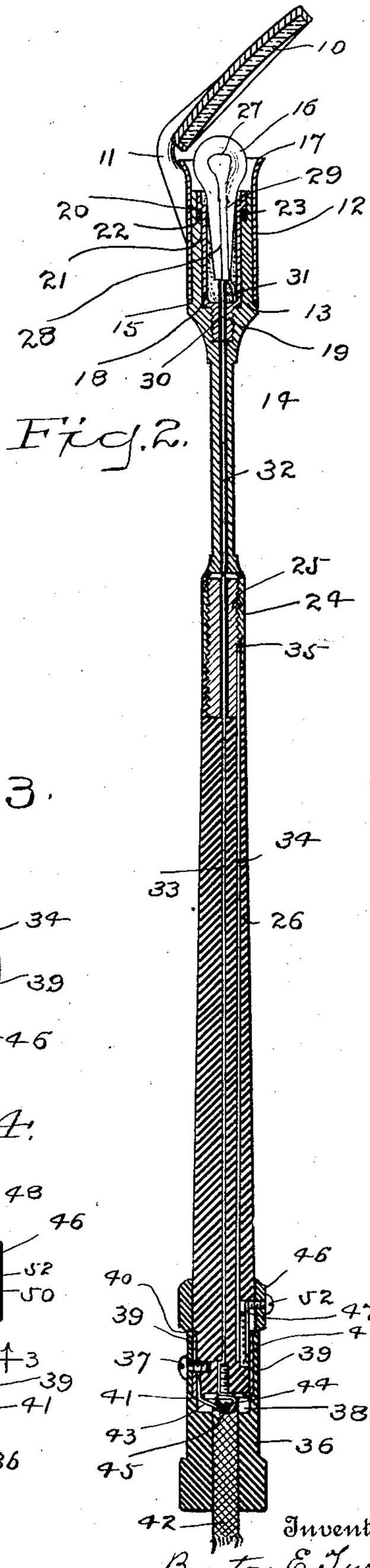


Fig. 2.

Fig. 3.

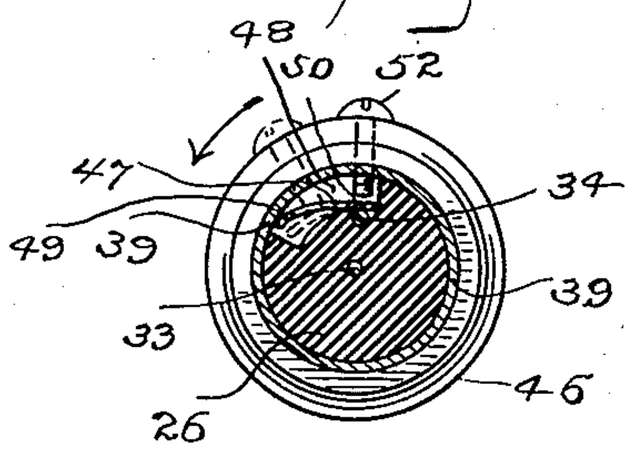
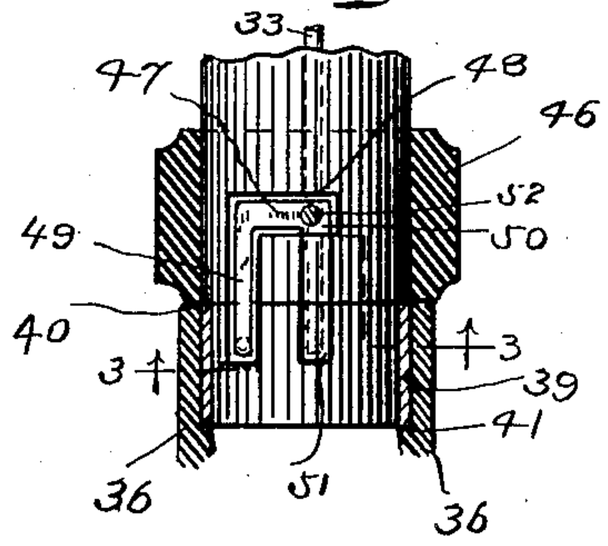


Fig. 4.



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ELECTRIC MOUTH-MIRROR.

938,525. Specification of Letters Patent. Patented Nov. 2, 1909.

Application filed July 6, 1908. Serial No. 442,006.

To all whom it may concern:

Be it known that I, BURTON E. TURNEY, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented a new and useful Electric Mouth-Mirror, of which the following is a specification.

This invention has for its object to produce a mouth mirror for dental and surgical use which shall be effectively illuminated by an electric lamp and in such a manner that the light does not shine in the eyes of the operator, which may be readily taken apart, all the parts which come in contact with the patient being so constructed that they may be sterilized, by boiling or otherwise, without injury and the parts being so assembled as to render it impossible for the fluids of the mouth to enter the instrument and cause short-circuiting of the current.

With these and other objects in view I have devised the novel electric mouth mirror of which the following description in connection with the accompanying drawing is a specification, reference characters being used to indicate the several parts.

Figure 1 is an elevation of my novel mouth mirror complete; Fig. 2 a longitudinal section; Fig. 3 a transverse section on an enlarged scale on the line 3—3 in Fig. 4; and Fig. 4 is a detail view partly in elevation and partly in section, illustrating in connection with Fig. 3 the construction and operation of the switch mechanism.

10 denotes the mirror which is set at a suitable angle for use in the mouth and is carried by an arm 11 rigidly secured to a reflector 12. The reflector is tubular and engages the head 13 of a carrier 14 with a sliding fit so that they may be readily removed but will remain securely in place, its inner end engaging a shoulder 15 on the head. The reflector projects beyond the head and partly incloses the lamp 16, the outer end of the reflector being flaring as at 17 so as to direct the rays of light given by the lamp upon the mirror, the lamp itself not being visible to the operator. The lamp is of ordinary construction and is carried by a base 18 provided at its lower end with a threaded hub 19 which engages a correspondingly threaded socket in the head of the carrier. The lamp base is provided near its outer end with a shoulder 20 and the recess 21 which receives the lamp base is provided with a shoulder 22. Between shoulders 20 and 22 I place a packing ring 23 which prevents the possibility of entry of the fluids of the mouth and avoids the danger of short-circuiting. The lower end of the carrier is provided with an internally threaded sleeve 24 which engages a hub 25 rigidly secured in a shank 26. The reflector, the casing of the mirror, the carrier and the lamp base are preferably made of metal, but the shank may be made of hard rubber or any suitable material and the hub vulcanized therein.

The filament of the lamp, indicated by 27, is connected to wires 28 and 29. Wire 28 connects with an insulated wire 30 in the lamp base and wire 29 connects with the base itself as at 31. Insulated wire 30 in the lamp base connects with an insulated wire 32 in the carrier, which in turn connects with a wire 33 which extends through the shank, said wire passing through hub 25 at the upper end of the shank from which it is insulated. 34 denotes another wire extending through shank 26 and insulated from wire 33 which connects with hub 25 as at 35. At the lower end of the shank is a hand piece 36 which may also be made of hard rubber and is secured to the shank in any suitable manner as by a set screw 37. The hand piece is provided with a socket 38 which receives the lower end of the shank, and is provided with a lining sleeve 39 through which set screw 37 passes. The shank is provided with a shoulder 40 which engages the top of lining sleeve 39 and the lower end of the sleeve engages a shoulder 41 in socket 38. 42 denotes an electric cable which enters the lower end of the hand piece and passes into socket 38. A wire 43 from the cable engages lining sleeve 39 and another wire 44 from the cable engages a binding screw 45 in the lower end of the shank which is also engaged by wire 33.

The switch comprises an operating sleeve 46 which oscillates on the shank and engages the upper end of the hand piece, and a spring 47 which is adapted to engage lining sleeve 39 as clearly shown in Fig. 3. It will of course be understood that the special shape of this spring is not of the essence of the invention. I have shown the spring as made substantially U-shape and as lying within a correspondingly shaped socket 48 in the lower end of the base. For convenience in description, I will specifically designate the arm of the spring which is adapted

to engage the contact sleeve by 49 and the other arm by 50. Arm 50 engages wire 34 as clearly shown in Fig. 3, and the outer face of said arm 50 is provided with an insulating strip 51 which effectually insulates it from lining sleeve 49. The operating sleeve is provided with a screw 52 which passes into socket 48 and engages the spring.

The operation is as follows: When the parts are in the position shown in Fig. 4 and in full lines in Fig. 3, the circuit is closed and the lamp is lighted. The passage of the current is as follows: From wire 44 through wires 33, 32, 30 and 28 to the filament, and returning through wires 29, the lamp base, the carrier and hub 25 to wire 34, thence through spring 47 to lining sleeve 39 and wire 43. The circuit is opened and closed by oscillation of the operating sleeve. When said sleeve and with it screw 52 are moved from the position shown in full lines in Fig. 3 to the position shown in dotted lines, the screw will force arm 49 of the spring away from the lining sleeve, as shown in dotted lines in Fig. 3, and will open the circuit and extinguish the lamp, oscillation of the sleeve and screw 52 from the position shown in dotted lines in Fig. 3 to the full line position will close the circuit and light the lamp again.

Having thus described my invention, I claim:

1. An instrument of the character described comprising a carrier having electrical connections and an internal shoulder, a lamp having a base threaded to engage the carrier and an external shoulder, a packing ring between said shoulders, for the purpose set forth, a tubular flaring reflector engaging the carrier and a mirror carried by the reflector.

2. In an instrument of the character described, the combination with a lamp, a mirror, a reflector and a shank by which said parts are carried, of a hand piece secured to the shank and having a lining sleeve in the circuit, a spring also in the circuit and adapted to engage the sleeve and an oscillating sleeve having a screw engaging the spring to open and close the circuit.

3. In an instrument of the character described, the combination with a lamp, a mirror, a reflector and a shank by which said parts are carried, of a hand piece secured to the shank and having a lining sleeve in the circuit, a spring also in the circuit which is socketed in the shank and comprises arms, one of which is adapted to engage the sleeve and the other is insulated therefrom, and an oscillating sleeve engaging said spring to open and close the circuit.

4. In an instrument of the character described, the combination with a lamp, a mirror, a reflector and a shank by which said parts are carried, of a hand piece secured to the shank and having a lining sleeve in the circuit, a U-shaped spring which is also in the circuit and is socketed in the shank, one arm of said spring being adapted to engage the spring and the other arm insulated therefrom, and means acting on the spring to open and close the circuit.

In testimony whereof I affix my signature, in presence of two witnesses.

BURTON E. TURNEY.

Witnesses:

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