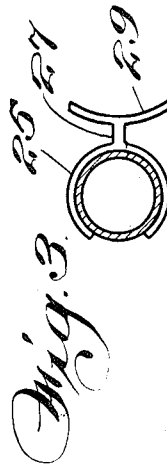
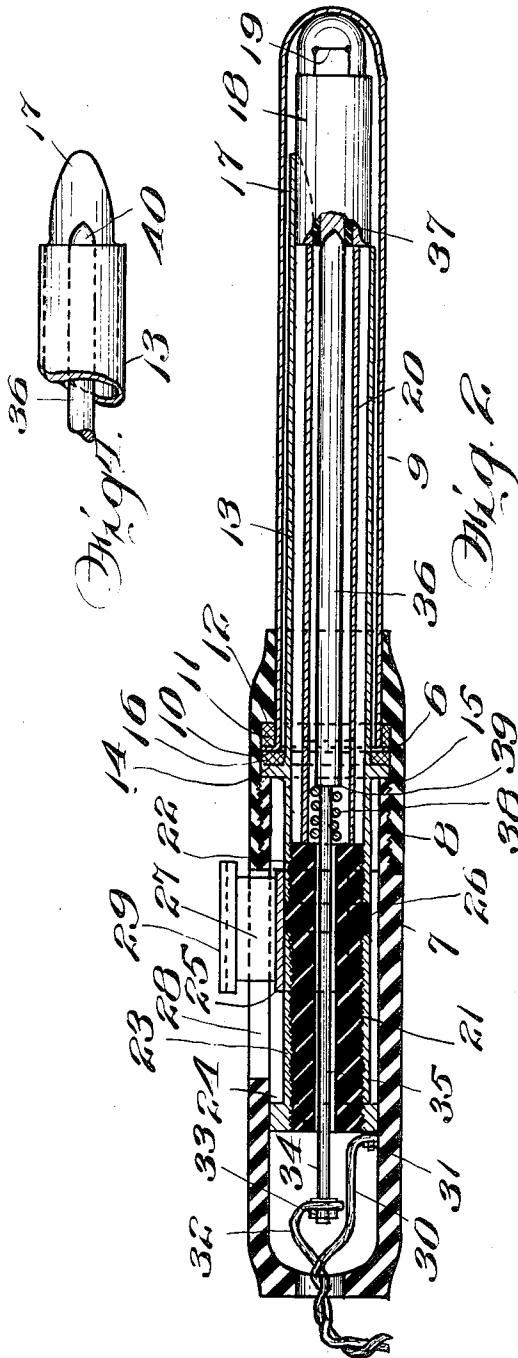


H. T. MARTIN & J. F. GOLDEN.
ILLUMINATING INSTRUMENT.
APPLICATION FILED DEC. 27, 1909.

981,447.

Patented Jan. 10, 1911.



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HOWARD T. MARTIN AND JAMES F. GOLDEN, OF BALTIMORE, MARYLAND.

ILLUMINATING INSTRUMENT.

981,447.

Specification of Letters Patent. Patented Jan. 10, 1911.

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To all whom it may concern:

Be it known that we, HOWARD T. MARTIN and JAMES F. GOLDEN, citizens of the United States, residing in the city of Baltimore and State of Maryland, have invented certain new and useful Improvements in Illuminating Instruments, of which the following is a specification.

This invention is an electric lamp or illuminator particularly adapted and intended for dental or surgical use in inspecting the interior of the mouth, throat and other cavities of the body.

The object of the invention is to provide an improved sanitary device for the purpose stated, a special feature being that the point or front end of the article, including the lamp, is inclosed or covered by a glass tube, so that it can be readily sterilized or cleaned after use. In connection with the glass tube at the front end of the instrument, a rubber or composition cover is employed, whereby all the conducting parts are perfectly insulated, so that there is no possibility of shock to the parts being examined, the rubber case or cover forming a convenient handle.

A further feature of novelty is a sliding sleeve switch and contact, by means of which the circuit can be opened or closed, the switch being conveniently located for manipulation by the thumb of a hand in which the instrument is held.

Further details of novelty will appear from the following description.

In the accompanying drawings—Figure 1 is a plan view of the device. Fig. 2 is an enlarged longitudinal section. Fig. 3 is a detail in section showing the slide switch. Fig. 4 is a detail in plan showing the contacts with the lamp socket.

Referring specifically to the drawings, the handle part of the casing of the instrument consists of two tubular sections 6 and 7, made of hard rubber or other composition, and these sections are united by a threaded joint at 8. The casing of the front part of the instrument consists of a glass tube 9, closed at its front end, and held within the casing section 6 in which it fits, the rear end of the tube being expanded or beaded as at 10, with a packing ring 11 located between the bead or rim and a shoulder 12 in the tube 6. In case of breakage of the tube it can be quickly renewed by unscrewing part 6 and slipping the tube out rearwardly, permitting the insertion of a new one in its

place. Within the casing thus formed is a metal tube 13, having near its rear end an external shoulder 14 which rests against the shoulder 15 at the front end of the handle section 7, and when the handle sections are screwed together the tube is held in place by engagement of the flange 14 between the end 15 of the section 7 and the rear end of the glass tube 9, a packing ring 16 being interposed between the flange and the end of the glass tube. At the front end the metal tube 13 has a tongue 17 which rests against the sleeve or outer contact 18 of the lamp base which carries the incandescent lamp 19.

Within the tube 13 is an insulating tube 20, the front end of which fits against the rear end of the lamp socket and the rear end of which rests against the front end of an insulating block 21. This insulating block is located within the handle of the instrument, and its is threaded at its front end to screw into the rear end of the metal tube 13, as indicated at 22. A metal sleeve 23 is screwed onto the rear end of the insulating block 21, said sleeve being reduced as at 24 to form an annular space for the sleeve switch 25 which may be slid back and forth to electrically connect or disconnect the sleeve 23 and the tube 13, the adjacent ends of said parts being separated and insulated from each other by a rib 26 on the insulating block 21. The sleeve switch has a stem 27 which projects through a slot 28 in the handle casing and is provided with a finger piece 29 to which the thumb of the operator may be applied.

One battery terminal 30 is connected as at 31 to the sleeve 23. The other battery terminal 32 is connected as at 33 to a metal rod 34 which extends through a central bore 35 in the insulating block 21, and beyond the same is joined to an enlarged metal rod 36 which is located in the insulating tube 20 and the front end of which forms a contact with the inner conductor 37 of the lamp socket, said conductor 37 being connected to one end of the filament and the other outer conductor 18 to the other end, in a known manner. A spring 38 is coiled around the rod 34 between the front end of the block 21 and the shoulder 39 at the rear end of the rod 36, said spring being in compression when the parts are assembled, and thereby holding the front end of the rod 36 in close contact with the inner conductor 37 of the socket, the parts being forced for-

ward when the handle section 7 is screwed into the handle section 6, the front end of the lamp pressing against the closed end of the outer tube 9.

5 To light the lamp, the sleeve switch 25 is pushed forward until it laps the ends of the sleeve 23 and tube 13, as shown in Fig. 2, the circuit then being from the wire 30 through the sleeve 23, switch 25, tube 13, tongue 17, sleeve or casing 18, filament 19 and back through the central pin 37, rods 36 and 34 to wire 32. To open the circuit, the switch 25 is slid back out of contact with the tube 13.

15 An advantageous feature of the device is the facility with which the parts may be assembled or disassembled. By unscrewing the handle sections 6 and 7 all the inner parts may be dropped out without the removal of any other fastenings, and when the parts are in place and the handle sections are screwed together the former will all be forced forwardly and held in proper relation to each other. The front end of the rod 25 36 is preferably pointed as at 40, to enter a corresponding depression in the base of the lamp socket, whereby it will center itself and also hold the lamp socket in proper position the front end of the socket being as 30 stated centered and held by pressure of its bulb into the closed end of the outer tube.

What we claim as new is:—

1. In an illuminating instrument, the combination of a casing having a closed glass 35 tube at the front end, an electric lamp with a bulb resting against the closed end of the tube, and conducting connections located within the casing and pressing against the lamp to hold the same in position in the tube.

40 2. In an illuminating instrument, the combination of a casing having a closed glass tube at the front end, an electric lamp with a bulb resting against the closed end of the tube, and conducting connections located 45 within the casing and including a rod pressing against the base of the lamp to hold the same in position in the tube.

3. In an illuminating instrument, the combination of a tubular casing closed and 50 transparent at the front end, an electric lamp in the front end of the casing, an outer conducting tube within the casing and an inner spring-pressed conducting member, located within the tube behind the lamp and 55 pressing against the same to hold it in position.

4. In an illuminating instrument, the combination of a tubular casing closed and 60 transparent at the front end, and providing a handle at the rear end made in separable sections, an electric lamp in the front end of the casing, and conducting members lo-

cated in the casing behind the lamp and bearing against the same to hold it in position, said members being held in position 65 by the handle sections and advanced against the lamp when the sections are united.

5. In an illuminating instrument, the combination of a tubular casing having separable front and rear members the former of 70 which is closed and transparent at the front end, an electric lamp in the said front end, a conducting tube located in the casing and connected to the lamp and clamped between said members when they are united, and 75 another conductor connected to the lamp and located within said tube and insulated therefrom.

6. In an illuminating instrument, the combination of a casing having a closed glass 80 tube at the front end, an electric lamp having a base, and a bulb resting against the end of the tube, a central conductor rod bearing yieldingly against the rear end of the base, means at the rear end of the casing to ad- 85 vance the rod against said base, to hold the lamp in position, and another conductor connected to the lamp and extending in the casing.

7. In an illuminating instrument, the combination of a casing comprising a handle 90 consisting of two tubular sections screwed together, a forwardly-projecting glass tube the rear end of which is clamped between said sections when they are united, and a 95 lamp and conductors located within said casing.

8. In an illuminating instrument, the combination of a casing having a handle consisting of two tubular sections screwed to- 100 gether, and having inner shoulders, a glass tube the rear end of which extends into one of said sections and is flared outwardly and clamped between said shoulders when the sections are united, and a lamp and conduct- 105 ing connections in the casing.

9. In an illuminating instrument, the combination of an outer casing transparent at the front end and formed at the rear end of sections screwed together and provided 110 with shoulders on the inside, a conducting tube with an external flange, located within the casing, the flange being clamped between the shoulders when the sections are screwed together, an electric lamp at the 115 front end of the casing, and an insulated conductor within said tube.

In testimony whereof we affix our signatures in presence of two witnesses.

HOWARD T. MARTIN.
JAMES F. GOLDEN.

Witnesses:

WILLIAM F. HAYES,
ANNIE M. MARTIN.