

Jan. 5, 1937.

R. E. BARR

2,066,313

DENTAL INSTRUMENT

Filed July 5, 1934

2 Sheets-Sheet 1

Fig. 1.

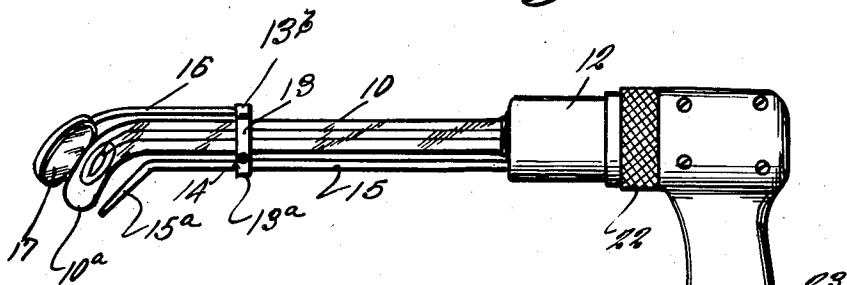


Fig. 3.

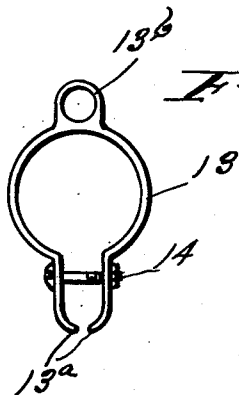


Fig. 4.

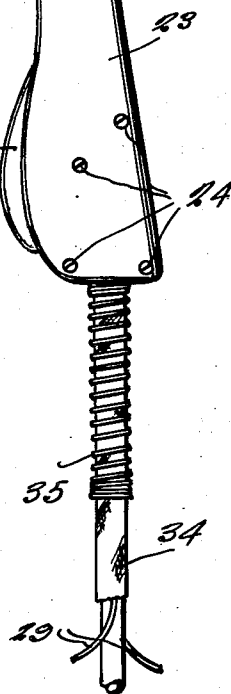
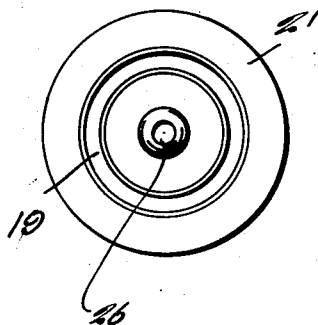
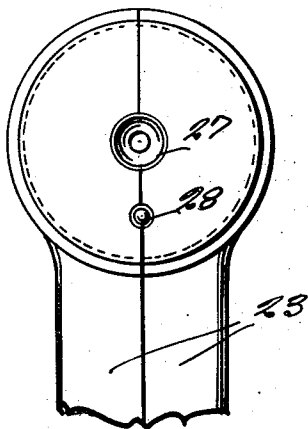


Fig. 5.



Inventor

Roy E. Barr

By *Charles A. O'Brien*
Attorney 2

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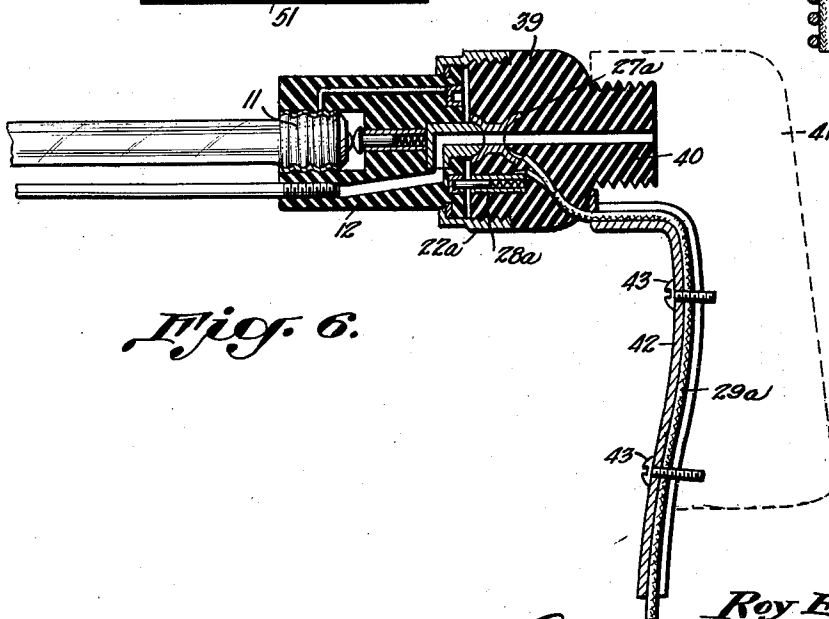
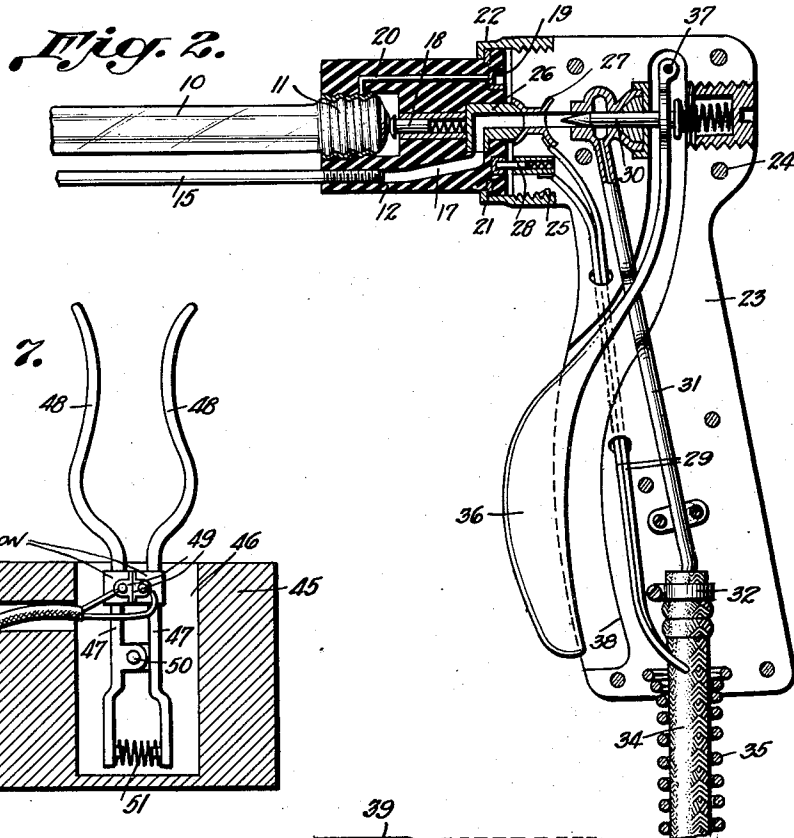
R. E. BARR

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DENTAL INSTRUMENT

Filed July 5, 1934

2 Sheets-Sheet 2



INVENTOR.
Ray E. Barr
BY *Clarence A. Davis & Hyman Berman*
ATTORNEYS

UNITED STATES PATENT OFFICE

2,066,313

DENTAL INSTRUMENT

Roy E. Barr, Childress, Tex.

Application July 5, 1934, Serial No. 733,909

3 Claims. (Cl. 32—69)

This invention relates broadly to dental instruments, and consists in the provision of certain new and useful improvements in an instrument of the type involving the subject matter of Patent No. 1,989,162 issued to me under date of January 29, 1935 and entitled "Dental instrument", which instrument combines in a single structure a mouth mirror, illuminated mouth light, and syringe for the delivery of compressed air for clearing particles or tissues from the oral cavity as well as all saliva and its movable matter.

In accordance with the present invention, an instrument of the character above suggested is provided with improved handle means to facilitate the handling of the instrument; also with improved adapter means for accommodating the instrument to any suitable type of handle; and also to the provision of a novel and efficient combination holder and switch for the instrument adapted to be arranged in circuit with the mouth light in such a manner that when the instrument is being handled for use the switch will automatically close for completing the circuit to the mirror and when the instrument is replaced on the combination holder and switch, the switch will be opened for interrupting the circuit to the light.

The present invention, together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a side elevational view of the instrument embodying the features of the present invention.

Figure 2 is an enlarged sectional view through the handle equipped end of the instrument.

Figure 3 is an elevational view of a clamp member.

Figure 4 is an end elevational view of a socket member.

Figure 5 is a fragmentary elevational view of the handle.

Figure 6 is a view similar to Figure 2 of a slightly modified form of the invention.

Figure 7 is a view partly in section and partly in elevation of the combination holder and switch.

Referring to the drawings by reference numerals, it will be seen that in accordance with the present invention the dental instrument comprises a dental lamp 10 of conventional manufacture, which same is provided at one end with an offset head 10a and at an opposite end with

a contact-equipped stem 11 adapted to be threaded into a threaded sleeve of conducting material arranged within a socket 12 of suitable insulating material.

Clamped to the elongated body portion of the lamp 10 is a split clamp 13 that is secured about the lamp 10 through the medium of bolt and nut means 14. Diametrically opposite to the bolt and nut means 14 the clamp 13 is provided with an apertured lug 13b with which is engaged the shank 16 of a dental mirror 17, the same being arranged in proper operative position to the end or head 10a of the lamp 10. The nut-equipped portion of the clamp 13 is also provided with jaw portions 13a which serve to clamp therebetween a portion of an air tube 15 that, at one end, is formed integral with a dental air syringe 15a. The free end of the tube 15 is threaded into the plug 12 as shown in Figure 2 to communicate with an air passage 17 provided in said plug.

Also suitably arranged in the plug 12 is a spring pressed contact member 18 that is adapted to engage with the contact on the stem 11 of the lamp as shown in Figure 2.

A substantially channel shaped circular contact member 19 is embedded in one end of the plug 12 and a conductor wire 20 has its opposite ends respectively in electrical engagement with the conductor sleeve arranged in the socket 12 and the circular contact member 19.

At the last named end thereof, the plug 12 is also provided with a flange 21 behind which engages a flange provided on one end of a coupling sleeve 22.

In the form of the invention shown in Figures 1 to 5 inclusive there is provided for the instrument a suitable handle 23 which latter is divided longitudinally into two complementary sections secured together by rivets or other suitable fastening means 24. At one end thereof, the handle 23 is provided with a lateral head one end of which is threaded for screw-threaded engagement with the coupling sleeve 22 as at 25.

The head-equipped end of the handle is also provided with an air passage therethrough that is in communication with the passage 17 in the plug 12 through the medium of an angular passage formed in a member 26 of conductor material embedded in the flange equipped end of the plug 12. The member 26 has a rounded end or head portion fitting in a concave socket provided in one end of a conductor sleeve 27 arranged within the head-equipped end of the handle 23.

Also arranged in the head-equipped end of the

handle 23 is a spring pressed contact member 28 that is in wiping engagement with the contact member 19 and electrically connected with the contact member 28 and the conductor sleeve 27 are the ends of electric wires 29 provided for supplying current to the lamp 18.

For controlling passage of air to the syringe there is also provided in the head equipped end of the handle 23 a suitable needle valve structure 30 including a casing having connected therewith an air tube 31 that extends through the handle and at one end is suitably coupled as at 32 with a flexible air hose leading from a suitable source of supply. The exposed portion of the said air hose and the wires 29 are arranged in a suitable sheathing 34 provided with a suitable spring wrapping 35 to prevent crimping of the wires and air hose during a use of the instrument.

The valve 30 is spring pressed as shown, and for opening the valve there is provided a suitable lever 36 pivoted as at 37 and operating in a suitable slot or groove 38 provided therefor in the handle. Obviously, by squeezing the hand used in holding the instrument, lever 36 will be drawn inwardly of the groove or channel 38 in a manner to open the valve 30 and permit air under pressure to pass therethrough and through the passage 17 and tube 15 to discharge from the syringe 15a in the usual manner.

It will also be apparent that the sleeve 22 provides for a swivel connection between the handle and the plug 12 thereby permitting a rotational adjustment of the plug and associated parts with respect to the handle.

In the form of the invention shown in Figure 6, instead of swivelly connecting the handle directly to the member 12, there is provided, for the purpose of adapting the instrument to other types of handles, an adapter 39 which, like the handle 23, is provided with the conductor sleeve 27a and spring pressed contact member 28a, and to the sleeve 27a and the contact member 28a are connected the wires of a conductor cord 29a.

The adapter 39 is adapted for threaded connection with the sleeve 22a at one end, and at an opposite end acts as a reduced threaded portion 40 of suitable diameter adapted to be threaded into one end of any suitable type of handle, the same being suggested in broken lines indicated by the reference numeral 41. If desired, any suitable valve means may be provided in the handle 41 for controlling the supply of air under pressure to the syringe.

Also in this form of the invention there is provided for the cord 29a a suitable shield 42 between which and a portion of the handle the cord 29a is received, the shield 42 being held in position through the medium of screws or other suitable fastening devices 43.

For use with both forms of the invention is a combination holder and switch of the type suggested in Figure 7. This combination holder and switch comprises, in the preferred form thereof, a base member 45 of any suitable material and adapted to rest firmly on a support or any other suitable device provided for that purpose. The member 45 is provided with a socket 46 in which are accommodated the shanks 47 of jaw members 48 that extend upwardly from the member 45 and are adapted to receive therebetween the instrument in a manner to cause the jaws 48 to spread

apart and thus separate the contacts 49 which are suitably mounted on the shanks 47 within the socket 46, the contacts of course being suitably insulated from the shanks. The wires 29 are connected at one end to the contacts 49 so that obviously when the contacts are closed, as will be the case when the instrument is in use, the circuit is completed to the lamp 18 for illuminating the same.

Below the contacts 49, the shanks 47 are suitably pivotally connected together as at 50 and below the pivotal connection 50 there is interposed between the shanks a spring 51 that tends to normally urge the jaws 48 inwardly towards one another to engage the contacts 49 one with the other for completing the circuit.

It will thus be seen that when the instrument is removed from between the jaws 48, the circuit to the lamp will be closed and will remain closed during use of the instrument. When the instrument, after use, is placed between the jaws 48 so as to spread the jaws apart, the contacts 49 will also be moved out of engagement with one another for interrupting the circuit to the lamp.

What is claimed is:

1. A dental device embodying an electric light bulb, and a dental mirror mounted on the bulb, a handle, a plug provided with a socket for threaded reception of the stem of the light bulb, a handle, means swivelly connecting the handle and plug together, inter-engaging contact means on the plug and handle at the joint therebetween for maintaining a circuit to the bulb, and a syringe nozzle mounted on the plug.

2. A dental device embodying an electric light bulb, and a dental mirror mounted on the bulb, a handle, a plug provided with a socket for threaded reception of the stem of the light bulb, a handle, means swivelly connecting the handle and plug together, and inter-engaging contact means on the plug and handle at the joint therebetween for maintaining a circuit to the bulb; a syringe nozzle mounted on the plug, a supply conduit for the syringe nozzle provided in the plug, means for delivering air under pressure to the conduit for the syringe nozzle, and a ball and socket connection between said means and said conduit at the joint between said plug and handle whereby during rotational adjustment of the head the circuit to the bulb and the stream to the nozzle will be unaffected.

3. In an instrument of the class described, a socket member, a dental light having a stem screw-threaded into said socket, a dental mirror respectively mounted on said bulb, contact means provided in the socket, a syringe nozzle mounted on said socket, conduit means for the syringe nozzle provided in the socket, an adapter, contact means on the adapter, engaging the first named contact means for maintaining a circuit for the dental light, conduit means provided in the adapter aligning with the conduit means in the socket for maintaining an uninterrupted flow of air to the syringe nozzle, means swivelly connecting the adapter and socket together, and a handle adapted to be rigidly connected with the adapter.

ROY E. BARR.