

Nov. 9, 1937.

T. F. PRATHER

2,098,732

DENTAL APPARATUS

Filed April 19, 1937

3 Sheets-Sheet 1

Fig. 1.

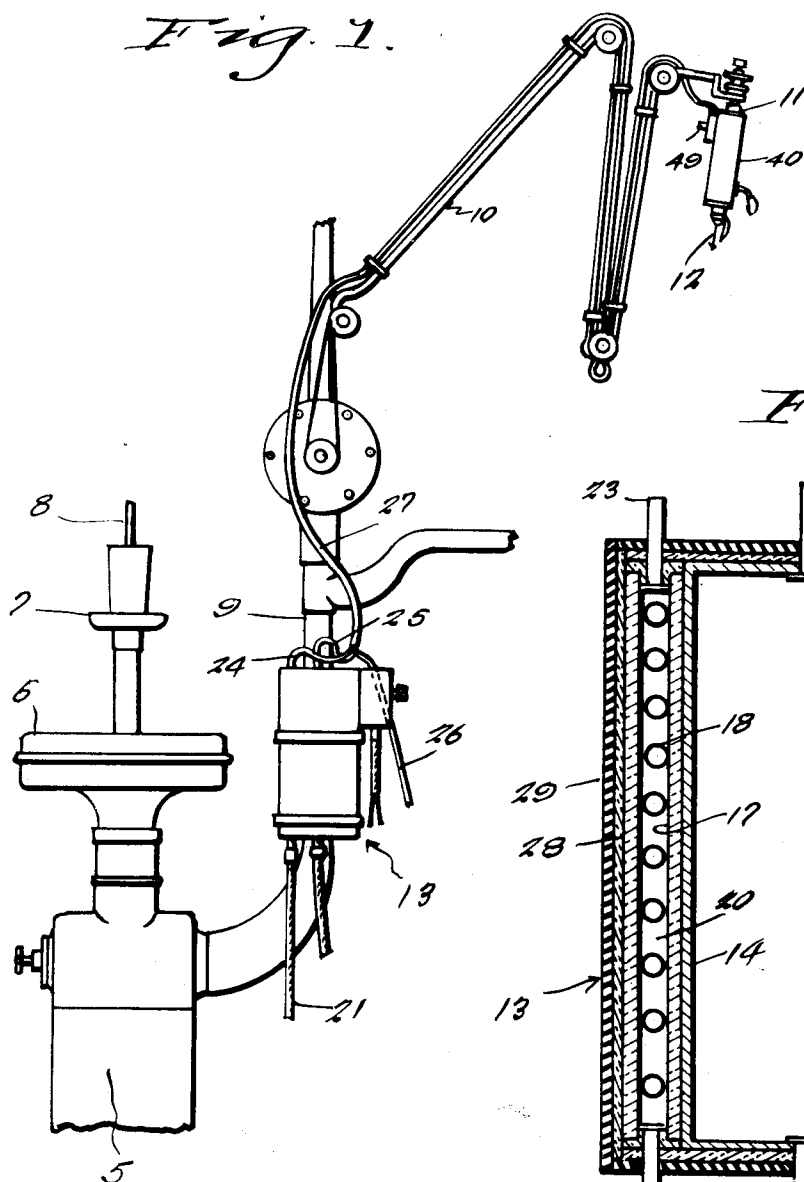
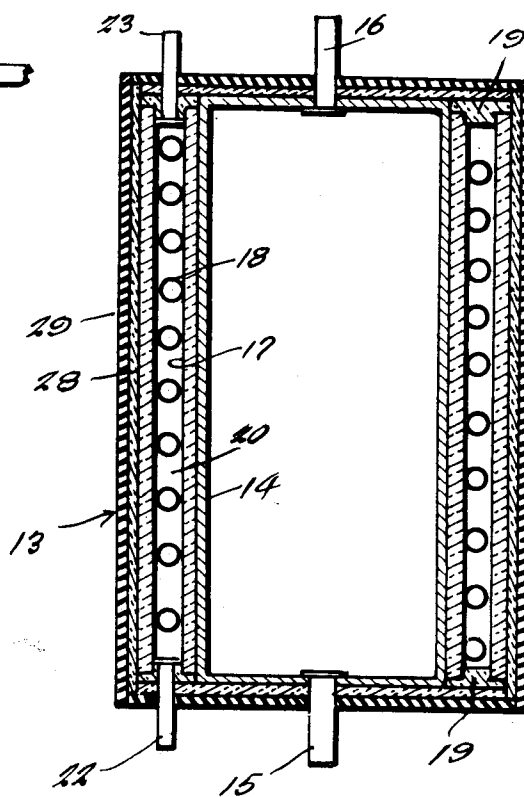


Fig. 2.



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3 Sheets-Sheet 2

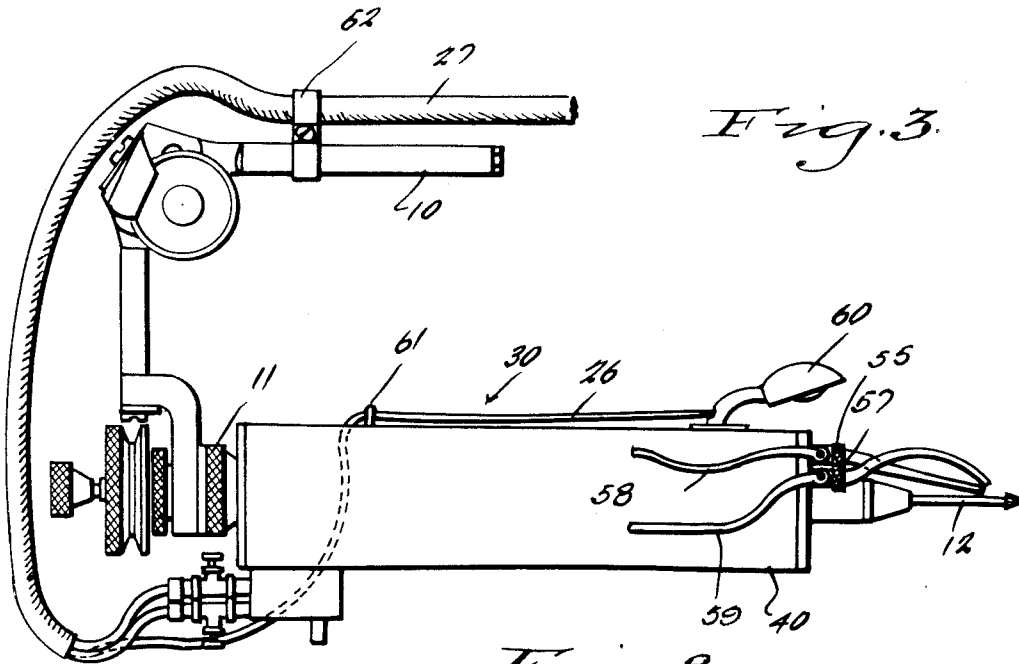


Fig. 8.

Fig. 4.

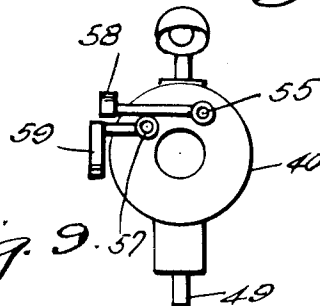
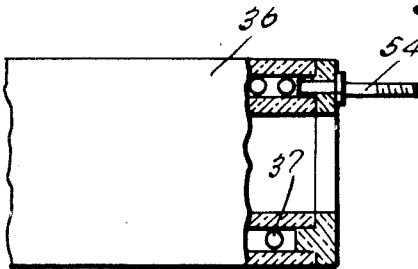
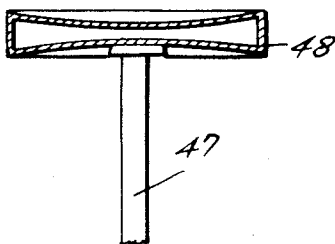
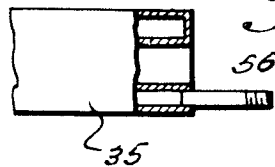


Fig. 9.

Fig. 10.



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Fig. 5.

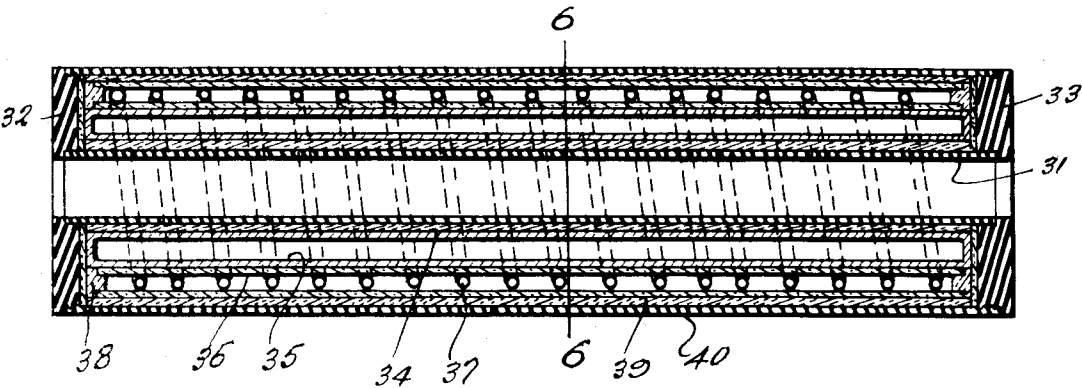


Fig. 6.

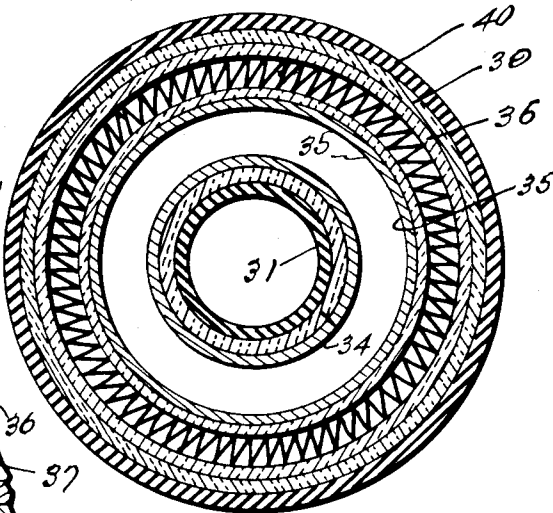
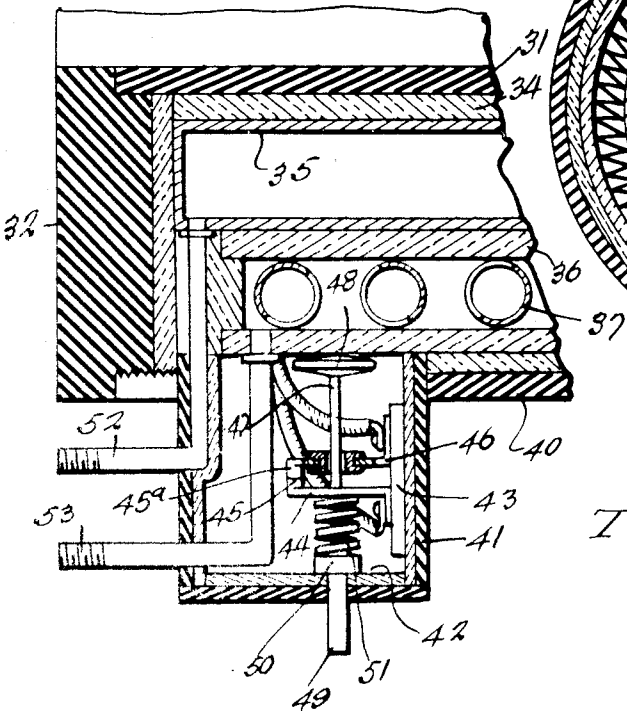


Fig. 7.



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UNITED STATES PATENT OFFICE

2,098,732

DENTAL APPARATUS

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Application April 19, 1937, Serial No. 137,878

5 Claims. (Cl. 32—28)

This invention appertains to new and useful improvements in dental apparatus and more particularly to an air and water supply attachment for drilling instruments.

5 The principal object of the invention is to provide an attachment for dental drilling instruments whereby air and water can be selectively directed in a convenient manner toward the work without removing the bit from the patient's mouth.

10 Another object of the invention is to provide a light attachment for drilling instruments.

Still another important object of the invention is to provide an attachment for drilling instruments whereby heated air and water can be supplied conveniently to the working area, without removing the burr from the mouth.

These and various other important objects and advantages of the invention will become apparent to the reader of the following specification.

20 In the drawings,

Figure 1 represents a fragmentary side elevational view of a dental drilling apparatus showing one form for heating air and water.

25 Figure 2 is a vertical sectional view through the water tank and heater associated therewith.

Figure 3 is a fragmentary side elevational view of a drilling instrument showing a modified form of heater.

30 Figure 4 is a front end elevational view of the attachment shown in Figure 3.

Figure 5 is a longitudinal sectional view through the second form of the attachment.

35 Figure 6 is a cross sectional view on the line 6—6 of Figure 5.

Figure 7 is an enlarged fragmentary longitudinal sectional view through the inner end portion of the attachment shown in Figure 3.

40 Figure 8 is a fragmentary longitudinal sectional view through the heating unit.

Figure 9 is a fragmentary longitudinal sectional view through the water jacket.

45 Figure 10 is a fragmentary side elevational view and sectional view showing the thermostatic wafer.

Referring to the drawings wherein like numerals designate like parts, it can be seen in Figure 1 that the numeral 5 represents the usual pedestal for supporting the basin 6, cup mount 7, and fountain 8, as well as the laterally disposed and upstanding post 9 from which the jointed arm 10 extends and supports the drilling instrument 11 which holds the usual bit or burr 12. Generally 55 referred to by numeral 13 is the water tank and

heating means, the heating means being both for the air supply and water of the tank.

The assembly 13 consists of the water tank 14 having the inlet pipe 15 and the outlet pipe or nipple 16. Surrounding the tank 14 is the hollow 5 shell 17 of insulation in which the resistance element 18 is convoluted. Annular closure rings 19 are provided at the ends of the shell 17 for closing the same and defining a chamber 20 for receiving air from the air supply line 21 which attaches to 10 the nipple 22 at the lower end of the shell 17.

A nipple at 23 extends from the upper end of the shell 17 and to this the tube 24 connects. The tube 25 from the nipple 16 along with the tube 24 and the conductor wires 26 extend through the 15 sheathing or flexible conduit 27 to the nozzles on the instrument 11.

Around the shell 17 is the heat resisting sleeve 28 and around this sleeve is the jacket 29 of insulation. The ends of the structure 13 are provided with insulating coverings as shown in Figure 2. 20

It can now be seen that water in the tank 14 is heated by the coil 18 while simultaneously air passing through the chamber 13 in which the coil 25 18 is located will be heated.

When the attachment or assembly 13 is not employed, the drilling instrument attachment generally referred to by numeral 30 can be employed on the drilling instrument 11. In this connection, see Figures 3 to 10 inclusive. This 30 attachment 30 consists of the hollow core 31 of insulation provided with the end circumferential flanges 32—33. This defines a spool-like structure and around the core 31 is disposed the sleeve 35 of heat resisting or insulating material. A hollow jacket of tubular formation and denoted by numeral 35 is disposed around the sleeve 34 and is intended for containing water. A hollow jacket of cylindrical formation and denoted by the 40 numeral 36 circumscribes the water jacket 35 and has the electrical heating element 37 convoluted therein. Annular closure members 38 are provided at the ends of the jacket 35. A heat insulating sleeve 39 circumscribes the shell 36 and 45 outside of this is the cylindrical casing 40 of insulation which has its ends internally threaded for receiving the end flanges 32—33.

At the rear end of the casing 40 is an outstanding box-like structure 41 of insulation having the 50 heat insulating lining 42. A plate 43 is provided on the inside of this box-like structure 41 and has the bracket 44 projecting therefrom, this bracket being provided with the contact 45 thereon. A second bracket 46 extends in parallel relation to 55

the bracket 44 and carries the contact 45a. Slidably disposed through the bracket 46 is the stem 47 of the thermostatic wafer 48.

The stem 47 also extends through the bracket 44 and connects to the push button 49 which is slidable through an opening in the box-like structure 41. The push button 49 is provided with the fixed collar 50 at the inner end thereof and interposed between this collar 50 and the bracket 44 is the coiled compressible spring 51. Wires from the heating element 37 connect to the brackets 44-46 carrying the aforementioned contacts 45-45a.

Breaking of the contact 45-45a can be retarded as the attachment is being used by simply pressing in on the button 49 which serves to keep the contacts 45-45a in contact in spite of the tendency of the wafer 48 to expand and break the said contact.

The aforementioned water jacket 35 has the nipple 52 while the jacket 36 is provided with the outside nipple 53, these nipples 52-53 being engaged by the tubes 25-24 respectively.

The forward end of the heating shell 36 is provided with a nipple 54 to which the adjustable nozzle 55 is connected and while the water jacket 35 is provided with the forwardly extending nozzle 56 to which the adjustable nozzle 57 is attached and these nozzles 55-57 are provided with valvular control means 58-59 respectively.

Mounted on the casing 40 is the light 60 and to this the aforementioned conductor 26 extends and preferably through suitable guides 61. Suitable clamp means on the arm section 10 are provided for the cable 27 and are denoted by reference character 62.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having thus described the invention, what is claimed as new is:

1. Heating means comprising a water tank having an inlet and an outlet, an air jacket surrounding the said tank, a heating element disposed in the said jacket, an air inlet and an air outlet for the said jacket, said water tank being of cylindrical construction and having a dental instrument receiving passageway disposed therethrough.

2. Heating means comprising a water tank having an inlet and an outlet, an air jacket surrounding the said tank, a heating element disposed in the said jacket, an air inlet and an air outlet for the said jacket, said tank having a drilling instrument receiving passageway therethrough.

3. Heating means comprising a water tank having an inlet and an outlet, an air jacket surrounding the said tank, a heating element disposed in the said jacket, an air inlet and an air outlet for the said jacket, and a heat insulating sleeve for the said jacket, said water tank being of jacket-like construction with a passageway therethrough for receiving a dental drilling instrument.

4. In combination, a dental drilling instrument, a water jacket disposed around the instrument, a heating unit disposed around the instrument, and a nozzle extending from the water jacket toward the chuck of the instrument, and a jacket-like structure for receiving the heating element and defining a handle for the instrument, said last-mentioned jacket having an air inlet and an air outlet.

5. In combination, a dental drilling instrument, a water jacket disposed around the instrument, a heating unit disposed around the instrument, and a nozzle extending from the water jacket toward the chuck of the instrument, and a jacket-like structure for receiving the heating element and defining a handle for the instrument, said last-mentioned jacket having an air inlet and an air outlet, and a nozzle connected to the air outlet of the last mentioned jacket.

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