Dec. 15, 1953

M. BADAN

2,662,523

SYRINGE FOR THE APPLICATION OF NASCENT OXYGEN, ESPECIALLY FOR DENTAL PURPOSES

Filed Aug. 24, 1950

FIG. 1

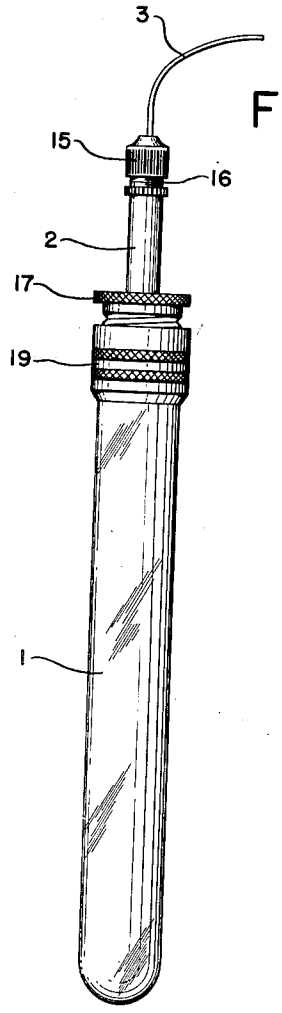
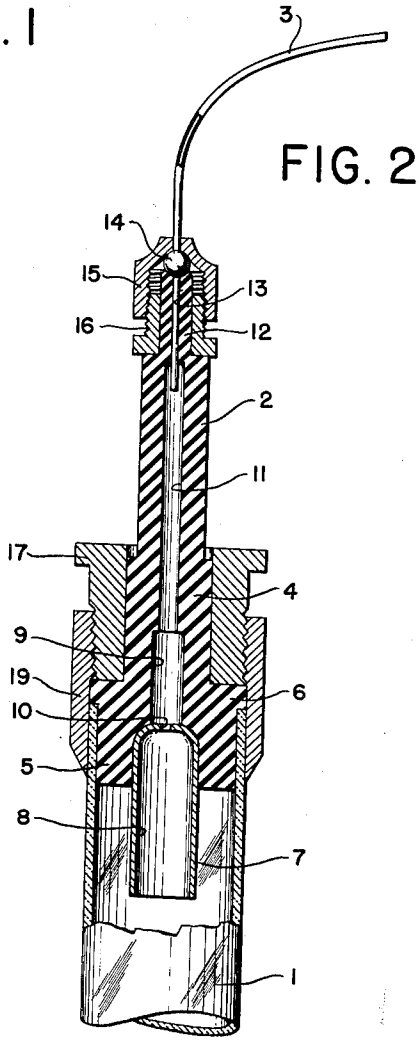


FIG. 2



INVENTOR

Mario Badan

BY

Pennie, Edmonds, Morton, Barrows & Taylor

ATTORNEYS

Patented Dec. 15, 1953

2,662,523

UNITED STATES PATENT OFFICE

2,662,523

SYRINGE FOR THE APPLICATION OF NASCENT OXYGEN, ESPECIALLY FOR DENTAL PURPOSES

Mario Badan, Rio de Janeiro, Brazil

Application August 24, 1950, Serial No. 181,142

Claims priority, application Brazil January 24, 1950

2 Claims. (Cl. 128—184)

1

This invention refers to an improved device, embodied in a receptacle with its needle size oxygen delivery tube, to be used especially for dental purposes, in particular, for the treatment of root canal, through the agency of nascent oxygen obtained from a solution containing nascent oxygen and silver, which is, in itself, a product of the exothermic reaction due to the decomposition of oxygenated water. In this reaction in which the silver acts as a catalyser, ammonia in small quantities serves to activate the reaction.

This process of dental treatment, known to present definite advantages, suffered from the lack of an adequate device for its practical realization, but the invention now eliminates this draw-back, completely and in a highly satisfactory manner, thanks to the improvements hereby introduced in the device now in use for this purpose and already covered by my Brazilian Patent No. 33,184.

The object of the invention has been exemplified in the enclosed drawing, wherein;

Fig. 1 is a lateral elevation of the new and improved device;

Fig. 2 is an enlarged longitudinal sectional view showing the detailed construction of the main part of the device illustrated in Fig. 1.

The drawing shows that the new and improved device comprises a cylindrical receptacle 1, open at one end and closed at the other end, and in which open end a hollow nozzle-like member 2, provided with a needle size oxygen delivery tube 3, can be introduced in an airtight, although removable, manner.

Said hollow member 2 has two axial parts, 4 and 5, of different diameters, as shown in Fig. 2, which give to said member 2 a ladder-like profile and, besides, between said parts 4 and 5, an external annular flange, 6, designed to provide the firm application of the assembly of member 2 over the mouth of receptacle 1, into the interior of which said member 2 is forced, under pressure, along part 5, the recessed base of this part 5 containing a cylindrical case made of metallic silver, 7, forming a passage 8 through which the contents of receptacle 1—in other words nascent oxygen—can reach a passage 9 provided along part 5 of member 2, through an intermediate port 10 in the metallic case 7.

In the interior of member 2, passage 9 becomes a smaller discharge passage, 11, which pierces the central part 4 and continues, axially, along part 2 to a perforated end portion, 12, having a perforation 13 into whtich is introduced the internal end of the oxygen delivery tube 3. At a certain point intermediate its ends, this delivery tube 3 presents an enlargement, preferably spherical in form, 14, over which is firmly pressed a connection sleeve 15 screwed over an external sleeve, 16, force fitted or screwed on said end portion 12. The tube 3 is, thus, firmly maintained in position in end portion 12 along its central part.

2

On part 4 of member 2 is force-fitted or screwed a nut or stuffing box 17 whereby to cooperate with an internally threaded sleeve, 19 fixed—by means of screw threads or forced fit—on the external part of the zone of receptacle 1 adjacent the mouth of same. Said nut 17 is firmly applied over the top face of flange 6, thus ensuring a strong and perfectly airtight seal between the various elements which constitute the device and avoiding any losses due to leakage of the contents of receptacle 1, when the latter is inverted during use.

Modifications in the details and the construction of the described embodiment of the invention are, evidently, possible within the fundamental concept of same, as declared in the following claims.

I claim:

1. A dental device for the treatment of root canals with nascent oxygen, comprising a cylindrical receptacle for holding a solution for producing nascent oxygen when contacted with a catalyst, said receptacle being closed at one end, a member having one end connected to the other end of the receptacle by an air-tight readily removable connection and having a passageway extending axially therethrough, the end of said member connected to the receptacle including a portion extending into the receptacle, means for catalyzing the production of nascent oxygen comprising a hollow cylinder of silver carried by the end portion of said member extending into the receptacle, said silver cylinder opening into said receptacle and arranged with its interior communicating with the passageway through said member, the end of said member remote from the receptacle including a bearing surface, a tube for delivering nascent oxygen into a root canal having an open delivery end and a mounting portion, the latter of which is mounted on said bearing surface at said remote end of said member, said delivery tube communicating with the passageway in said member, and means for securing the mounting portion of said delivery tube to said bearing surface in air-tight condition with the passageway in the delivery tube

communicating with the passageway in said member.

2. A dental device for the treatment of root canals with nascent oxygen, comprising a cylindrical receptacle for holding a solution for producing nascent oxygen when the solution is contacted with a catalyst, said receptacle being closed at one end, a nozzle-like member connected to the other end of the receptacle by an air-tight readily-removable connection and having a passageway extending axially therethrough, said nozzle-like member having a cylindrical end portion fitting in the open end of said receptacle and a flange engaging said end of the receptacle, means for releasably securing said flange against said end of the receptacle, means for catalyzing the production of nascent oxygen in the receptacle comprising a hollow cylinder of silver carried by said end of said nozzle-like member fitting in said other end of the receptacle, said silver cylinder opening into said receptacle and being arranged with its interior communicating with the passageway through said nozzle-like member, the end of said nozzle-like member remote from the receptacle including a bearing surface, a tube for delivering nascent oxygen into a root canal one end portion of which extends into the remote end of the nozzle-like member, said delivery tube communicating with the passageway in said nozzle-like member, and means for securing said one end portion of the delivery tube against said bearing surface in an air-tight relationship with the passageway in the delivery tube communicating with the passageway in said nozzle-like member.

MARIO BADAN.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
401,950	Haussmann	Apr. 23, 1889
563,621	Schimmel	July 7, 1896
1,240,033	Dickinson	Sept. 11, 1917
1,319,243	Powers	Oct. 21, 1919
2,317,558	Smith	Apr. 27, 1943

FOREIGN PATENTS

Number	Country	Date
252,318	Great Britain	Dec. 30, 1926