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PATENTED OCT. 31, 1905.

J. W. DENNIS.
DENTAL APPLICATOR.
APPLICATION FILED JUNE 14, 1904.

2 SHEETS—SHEET 1.

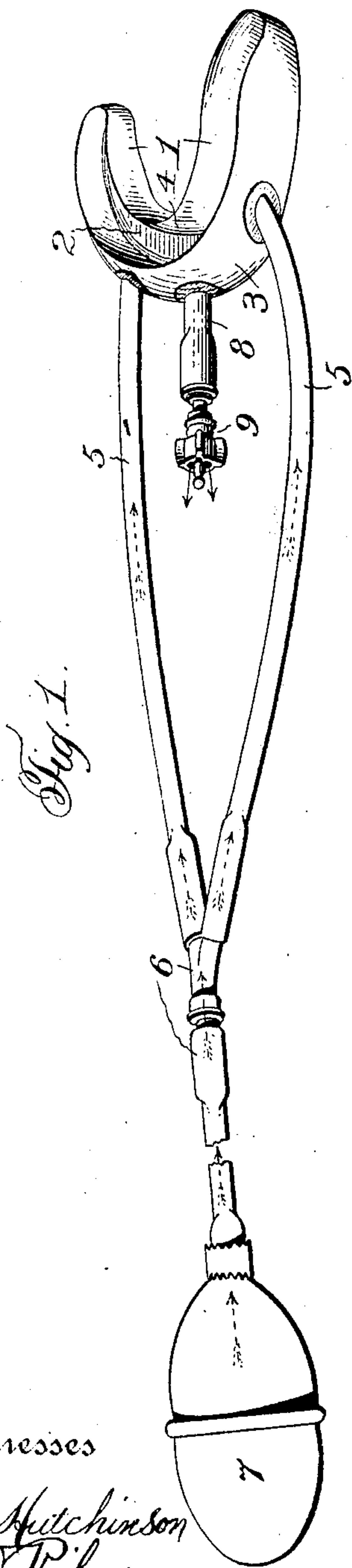


Fig. 3.

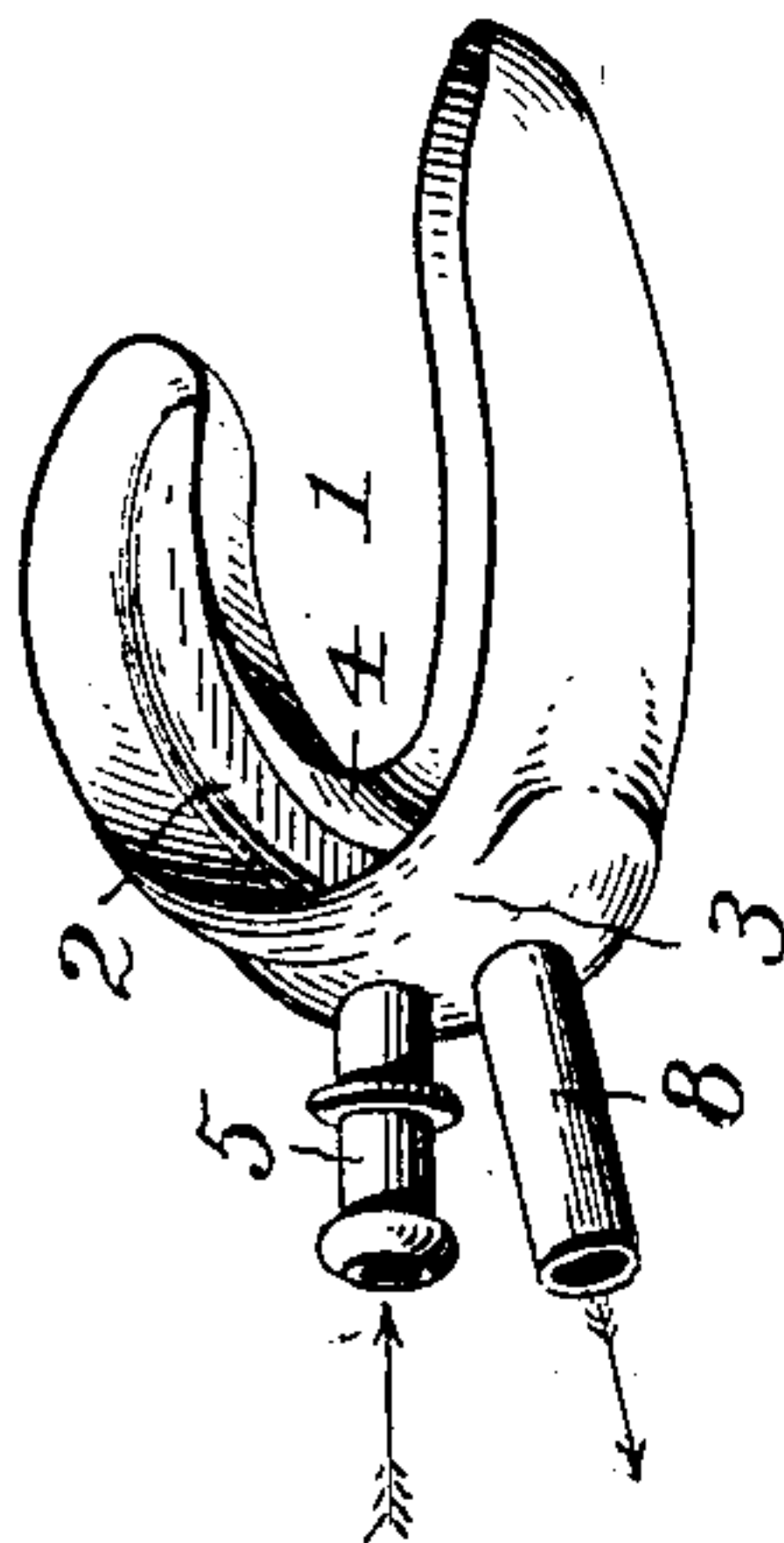


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

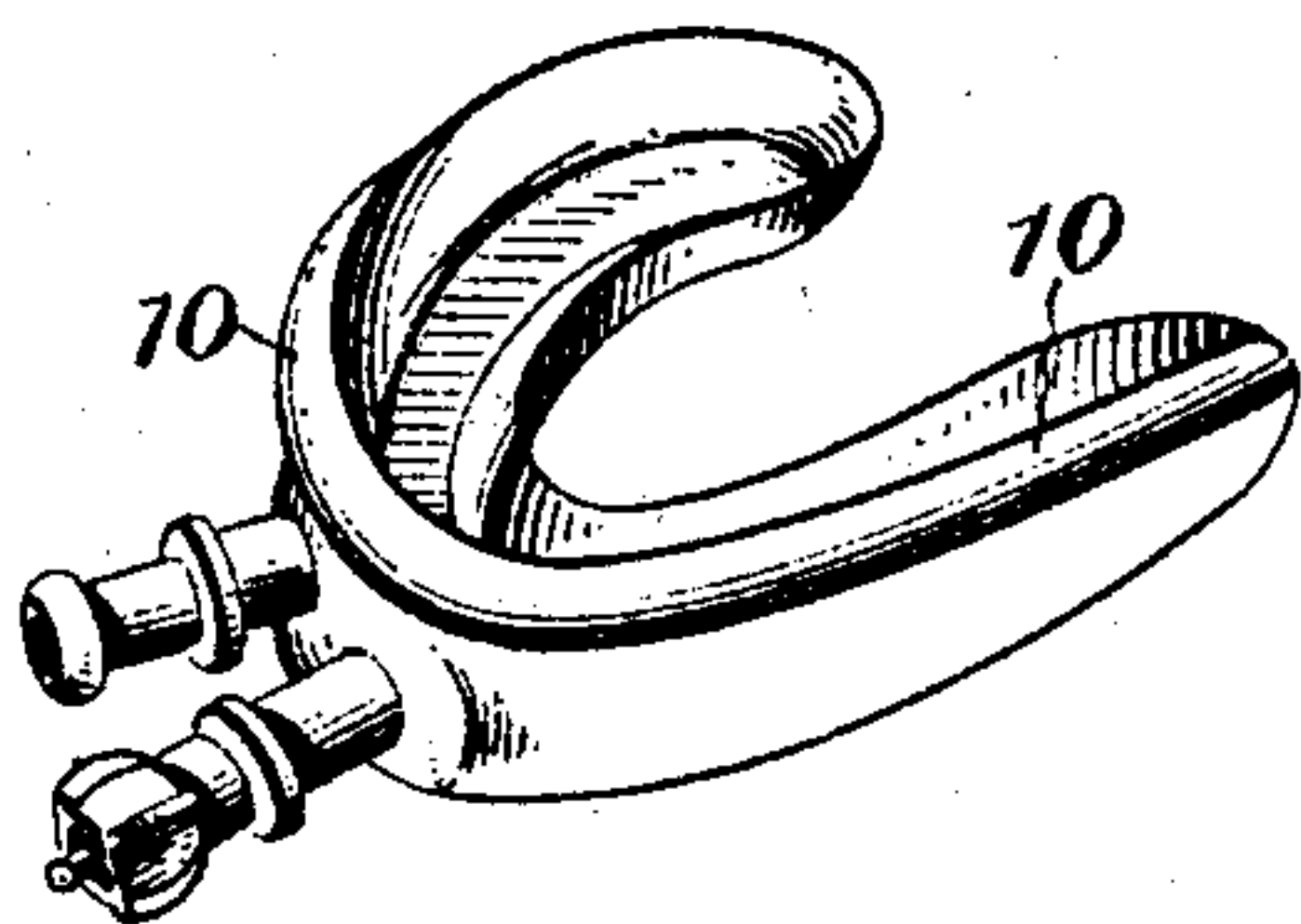


Fig. 5.

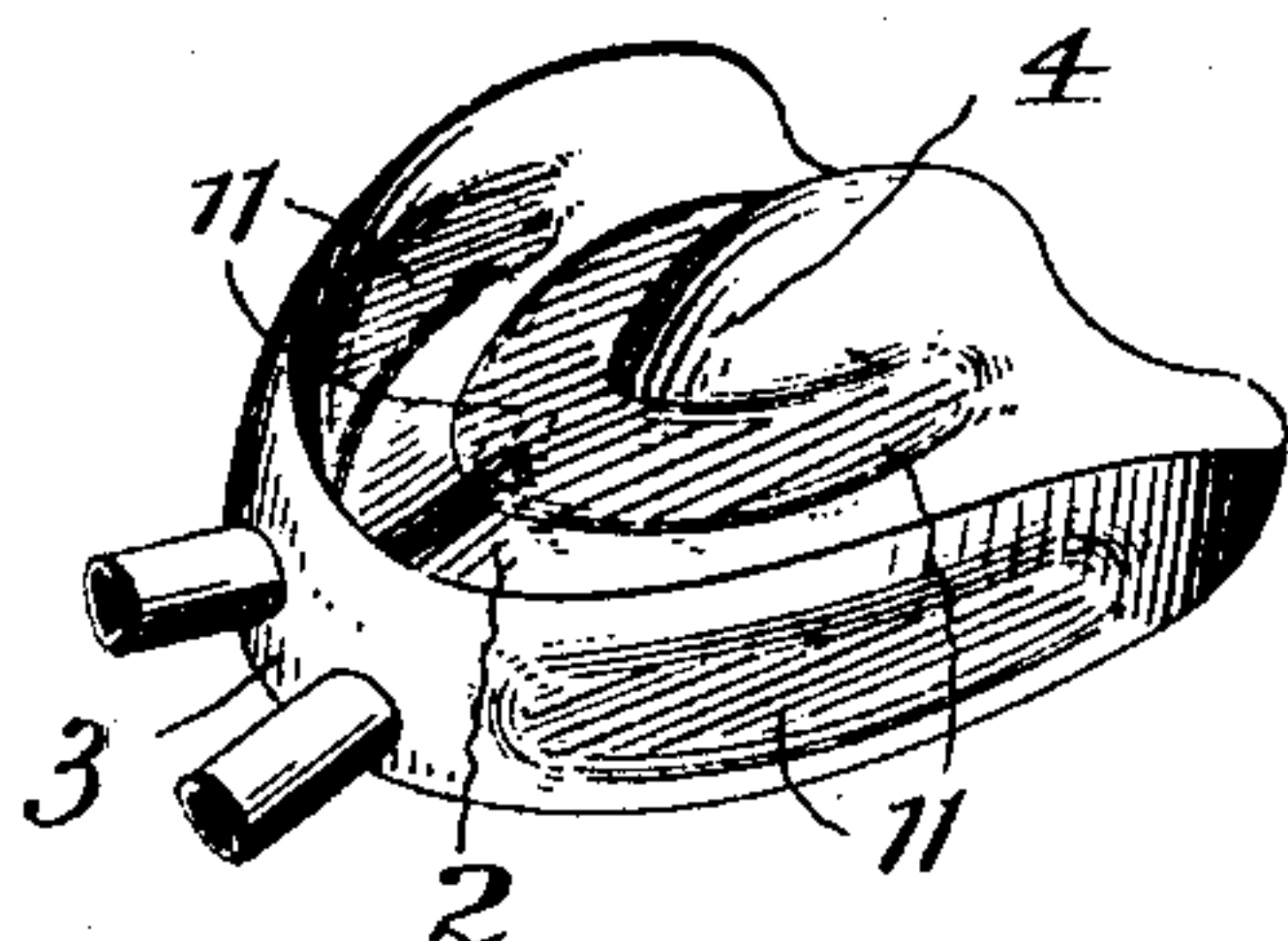


Fig. 6.

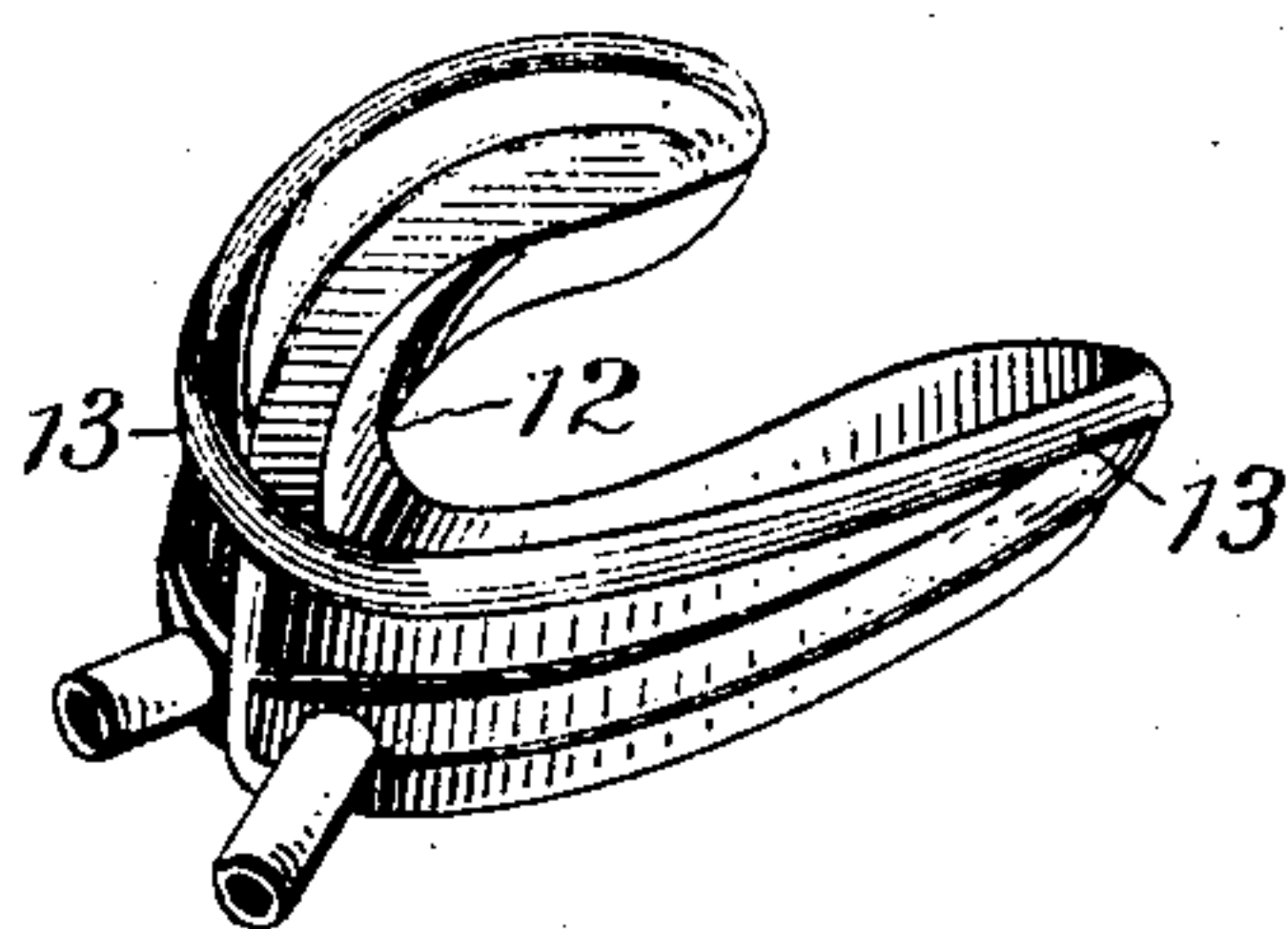


Fig. 7.

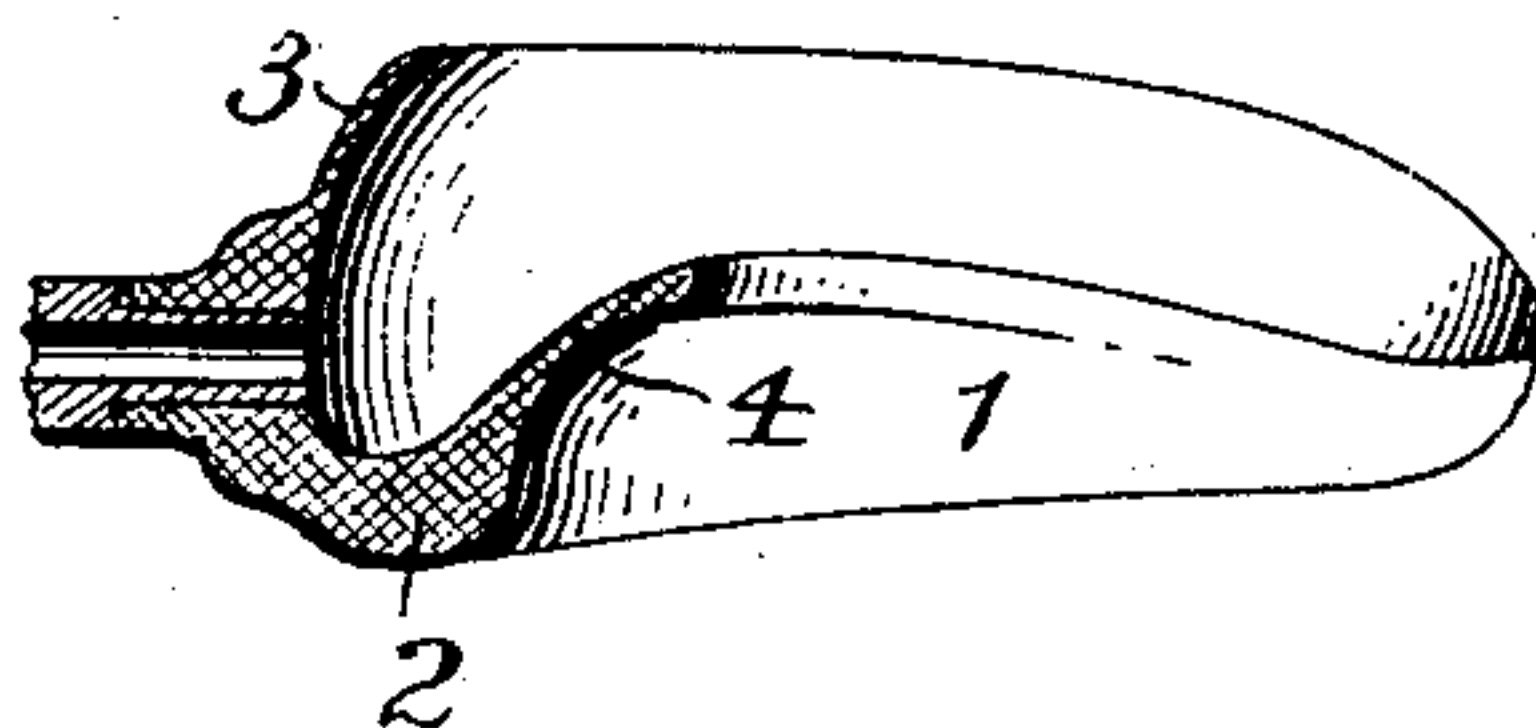


Fig. 8.

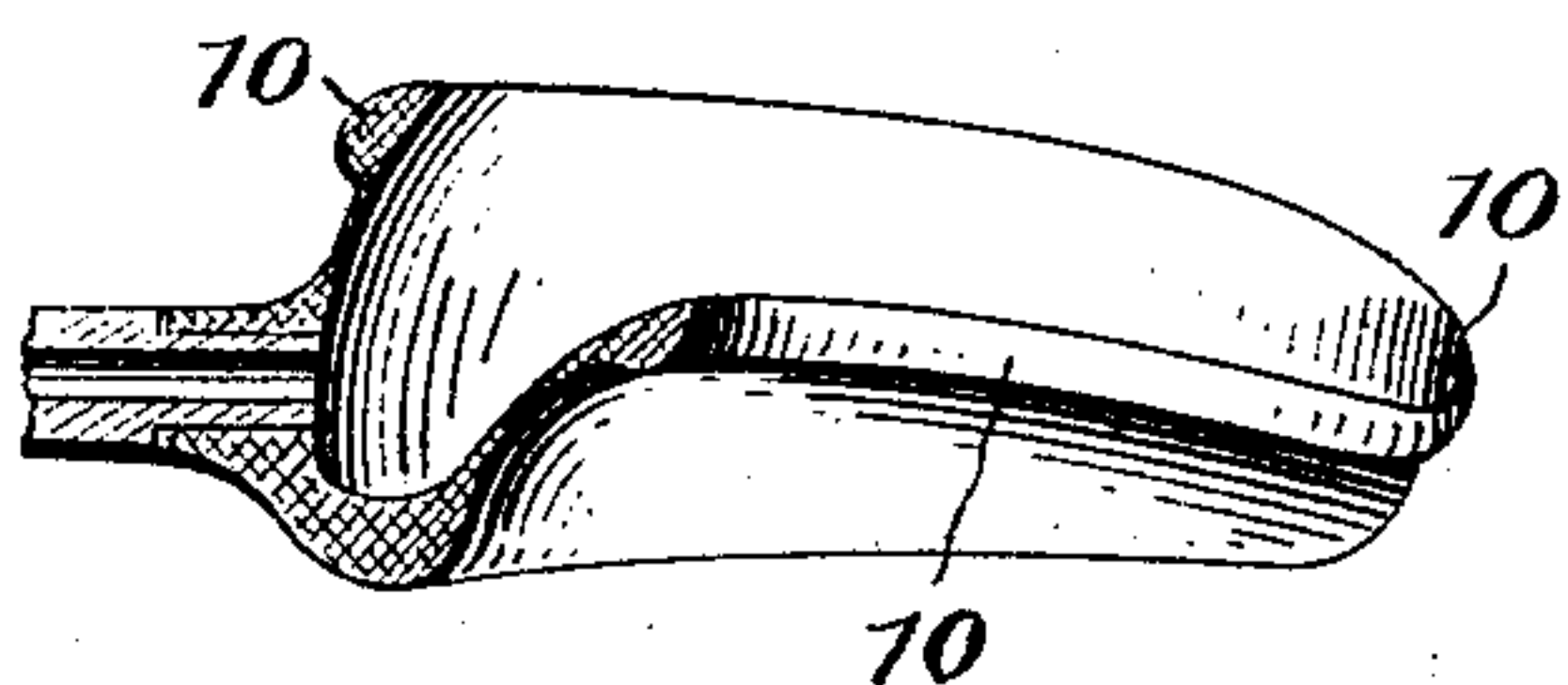


Fig. 9.

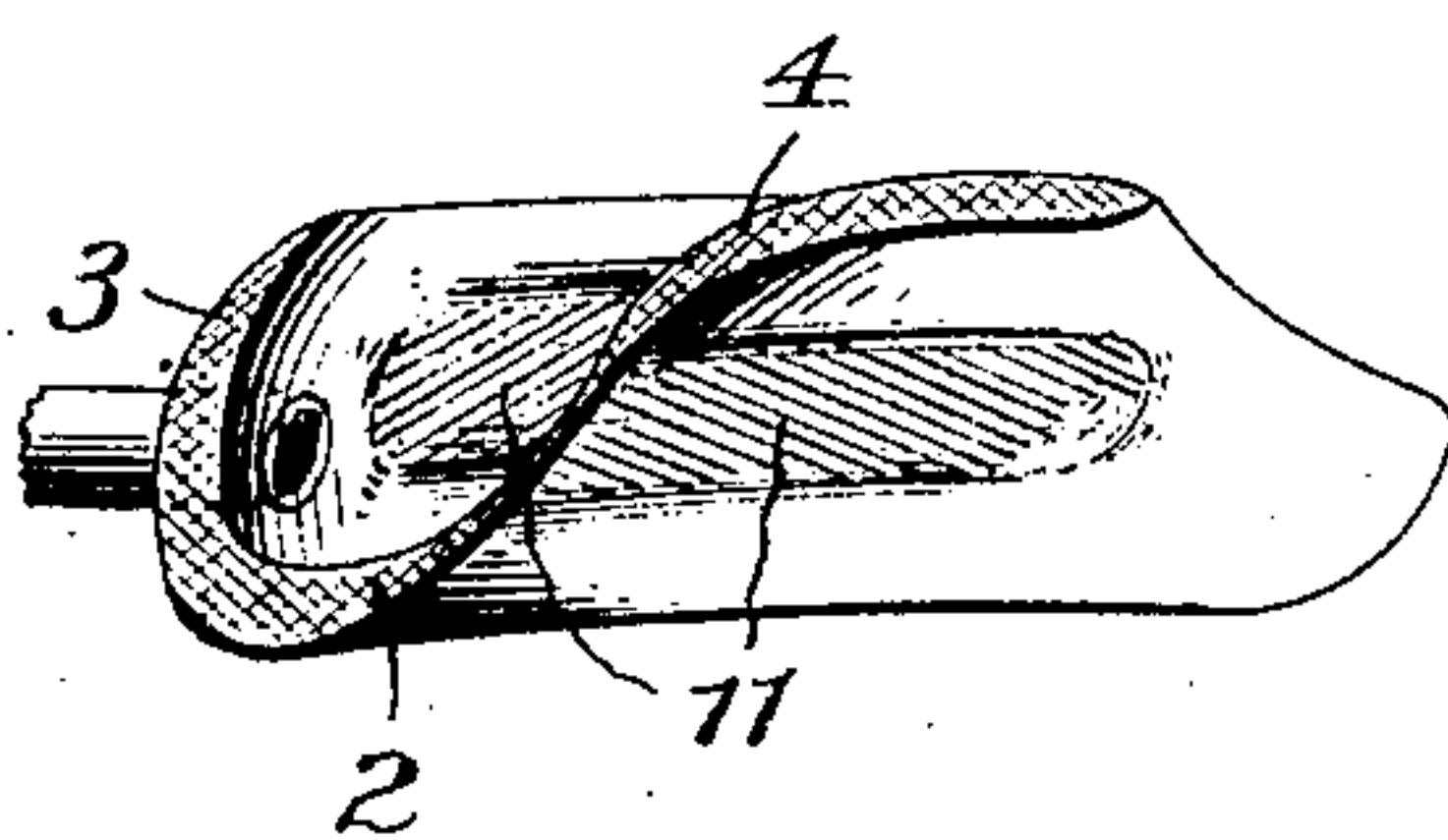
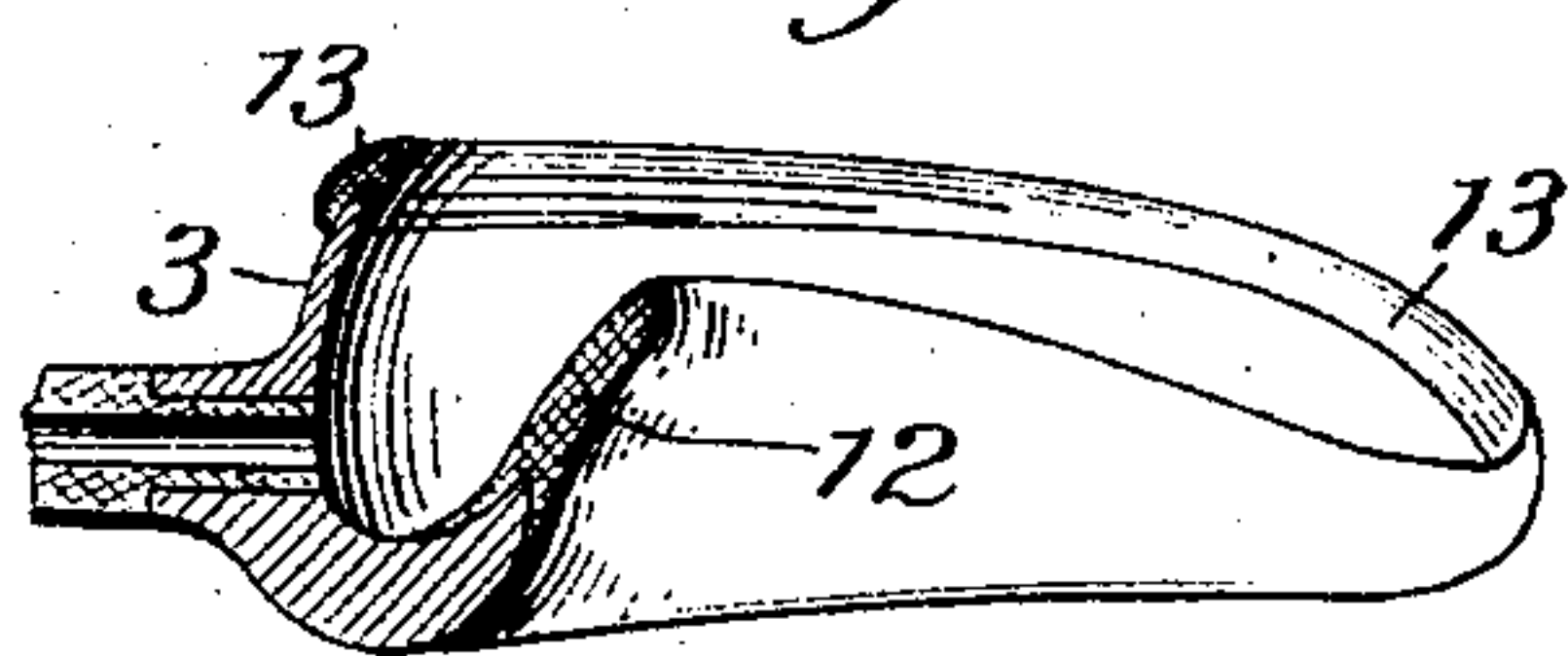


Fig. 10.



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UNITED STATES PATENT OFFICE.

JAMES W. DENNIS, OF CINCINNATI, OHIO.

DENTAL APPLICATOR.

No. 803,474.

Specification of Letters Patent.

Patented Oct. 31, 1905.

Application filed June 14, 1904. Serial No. 212,530.

To all whom it may concern:

Be it known that I, JAMES W. DENNIS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Dental Applicators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in dental applicators, and more especially is designed as a device of this character combining in its structure the features and advantages of a douch, flusher, and irrigator.

The object of the present invention is the provision of a device of the character mentioned which is so constructed as to subject the teeth and gums to the active and reactive force of any fluid forced into the applicator, thus causing the fluid to reach and pass through the interstices between and around the necks of the teeth and forcing out by flushing the accumulations which are beyond the reach of tooth brush and pick.

Furthermore, the invention contemplates the provision of a device whereby absolute sterilization may be accomplished and diseases of the teeth and gums may be subjected to the action of remedies for any length of time without dilution by admixture with saliva and also by which decaying surfaces of the teeth may be treated, thereby not only arresting decay, but also preventing recurrence thereof or the formation of new cavities adjacent to those treated by the operation of filling.

The invention also aims to provide a device of great practical value and efficiency in cleansing crown and bridge work wherein food particles find lodgment beyond the reach of brush or pick and by properly acting upon the same obtain a removal of the germ life, which if left diseases the gums and promotes decay.

With these general objects in view and others which will appear as the nature of the improvements is better understood the invention consists, substantially, in the novel construction, combination, and arrangement of parts, as will be hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a preferred embodiment of the herein-

described invention. Fig. 2 is a transverse sectional view thereof, taken at a point through the outlet-tube. Figs. 3, 4, 5, and 6 are perspective views of other forms of the invention. Figs. 7, 8, 9, and 10 are transverse sectional views, respectively, of the forms shown in Figs. 3, 4, 5, and 6.

Referring in detail to the drawings, and more especially to Figs. 1 and 2, the numeral 1 designates a reservoir or receptacle which is formed of soft rubber; and said reservoir comprises a bottom 2, an anterior wall 3, and a posterior wall 4. The reservoir 1 is shaped to conform to the configuration of the gums and teeth, and by reason of being formed of soft rubber the anterior and posterior walls will firmly engage the gums, and thereby securely hold the reservoir in position thereon, so as to completely envelop the teeth. Thus the teeth are incased and freed from contact by the tongue, saliva, and air so long as the reservoir is held upon the gums.

For the purpose of feeding to the reservoir a suitable agent for treating the gums and teeth either by washing or by medication for the prevention and cure of diseases a pair of inlet-tubes 5 is employed, said tubes entering and being secured in the anterior wall 3, and said inlet-tubes diverge from a common feed-tube 6 in order to project the treating agent into the reservoir at opposite sides thereof, and thereby set up counter-currents within said reservoir. The tube 6 has a compressible bulb 7 connected thereto, said bulb in the use of the invention being filled with the agent for the treatment of the teeth and gums; but it will be understood that the bulb 7 may be dispensed with and the tube 6 connected to any other suitable source without departing in the least degree from the invention. Also connected to the anterior wall 3 is an outlet-tube 8, which is provided with a cap or valve 9 for controlling said outlet-tube, and through the medium of the outlet-tube the reservoir 1 may be drained of the treating agent after the treatment is completed.

In Figs. 3 and 7 is illustrated another form of the invention, and by referring thereto it will be noted that this form is substantially the same as shown in Figs. 1 and 2, excepting that only one inlet-tube 5 is employed, the same being positioned at substantially the center of the anterior wall 3. The outlet-tube 8 in this form is positioned at one side of the inlet-tube 5. It will also be noted that the posterior wall 4 in this form is of less height

than the anterior wall 3. The form shown in Figs. 3 and 7 differentiates, further, from that shown in Figs. 1 and 2 by the bottom wall being made of hard rubber, the anterior and posterior walls being vulcanized thereto. Thus said walls may be comparatively thinner than the walls of the form shown in Figs. 1 and 2, which results in their yielding to a greater extent under the pressure of the treating agent when the latter is forced therein.

In Figs. 4 and 8 is illustrated another form of the invention; but this form is substantially the same as that illustrated in Figs. 3 and 7, excepting that a marginal bead 10 is placed upon the upper edges of the anterior and posterior walls, whereby said edges are strengthened, and at the same time said bead provides, as it were, a clamping-surface which binds upon the gums, and thereby effectually holds the reservoir 1 in position thereon.

Figs. 5 and 9 illustrate a further form of the invention. In this form, however, the bottom 2 is enlarged and the posterior wall 4 has less inclination than in the other forms, and the body of the reservoir 1 is formed of hard rubber; but the sides of the anterior wall 3 and the bottom 2 are provided with elongated sections 11, of soft rubber, which is vulcanized into the hard rubber to provide yielding surfaces for the treating agent introduced to the reservoir. Otherwise the form shown in Figs. 5 and 9 is practically the same as in the other forms.

Figs. 6 and 10 also illustrate a further form of the invention in which the reservoir 1 is formed of metal; but the posterior wall is of soft rubber, as indicated at 12, suitably secured to the metallic body of the reservoir. The edge of the anterior wall 3 is also provided with a rubber binding-strip 13, and through the medium of the soft-rubber posterior wall and the binding-strip 13 the reservoir is effectually held upon the gums.

If desired, the body of the reservoir 1 might also be formed of glass, porcelain, and similar substances, and in such case the anterior and the posterior walls would be provided with a binding-strip at their edges similar to the binding-strip 13 of the form shown in Figs. 6 and 10.

In the use of the invention the reservoir 1 is applied to the teeth to be treated so that the walls 3 and 4 thereof embrace the gums, and thus the teeth are completely incased and isolated from contact by the tongue, saliva, and air. After so positioning the reservoir the bulb 7, having been previously supplied with a treating agent, is compressed, whereupon the treating agent is forced therefrom into the reservoir, and under the pressure exerted by compression of the bulb the treating agent is caused to pass between and around the necks of the teeth, thereby effecting dislodgment of any accumulations and accomplishing a thorough cleansing of the

teeth. At this point it may be noted that it is not necessary at all times to entirely fill the bulb 7, for when the latter is provided with but a small supply of the treating agent such amount is ample for accomplishing its purpose by simply holding the bulb in a position elevated above the plane of the reservoir when applied to the teeth, and, on the other hand, if the bulb 7 is fully charged with the treating agent the latter may be effectually applied to the reservoir by holding the bulb in a position below the plane of the reservoir. Thus it will be seen that the applicator may be used in an economical manner, and quantities of the treating agent varying from a teaspoonful to two or more ounces may be used. By holding the bulb in a compressed state the treating agent may be retained in the reservoir, thus holding the teeth and gums immersed therein, and by alternately compressing and relaxing the bulb the agent may be alternately introduced to and withdrawn from the reservoir. This latter manner of using will cause a complete flushing of the teeth, which is especially desirable for cleansing crown and bridge work.

When the bulb is compressed, the treating agent under the stress of such compression will cause the flexible walls of the reservoir to expand, and when pressure on the bulb is relaxed the relaxation of the flexible walls will cause a reactive effect upon the treating agent, thereby again forcing the latter against the teeth and gums as the treating agent is withdrawn from the reservoir. This double effect on the treating agent is of great value, inasmuch as the same attacks the teeth under pressure both at the time of introduction into the reservoir and withdrawal therefrom.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A device of the class described, comprising a reservoir including a bottom, an anterior wall and a posterior wall, said reservoir conforming to the shape of the gums and when applied thereto incasing and isolating a plurality of the teeth, the anterior and posterior walls embracing and engaging the gums to hold the reservoir thereon, and means for feeding a treating agent to said reservoir.

2. A device of the class described, comprising a reservoir adapted to be applied to the teeth to incase and isolate the same, means for feeding a treating agent thereto, and an outlet-tube for removing the treating agent from the reservoir.

3. A device of the class described, comprising a reservoir adapted to be applied to the teeth to incase and isolate the same, an inlet-tube for feeding a treating agent to said reservoir, an outlet-tube for removing the treating agent from the reservoir, and a valve for controlling said outlet-tube.

4. A device of the class described, compris-

ing a reservoir adapted to be applied to the teeth to incase and isolate the same, said reservoir including a bottom, an anterior wall, and a posterior wall, an inlet-tube connected
5 to the anterior wall for feeding a treating agent to the reservoir, and an outlet-tube also connected to the anterior wall for removing the treating agent from the reservoir.

10 5. A device of the class described, comprising a reservoir adapted to be applied to the teeth to incase and isolate the same, said reservoir including a bottom, an anterior wall,

and a posterior wall, an inlet-tube connected to the anterior wall for feeding a treating agent to the reservoir, an outlet-tube also connected to the anterior wall for removing the
15 treating agent from the reservoir, and a valve for controlling said outlet-tube.

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

JAMES W. DENNIS.

Witnesses:

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FANNIE R. FITTON.