

J. M. GILMORE.
DENTAL APPARATUS.
APPLICATION FILED JULY 15, 1911.

1,039,728.

Patented Oct. 1, 1912.

Fig. 1.

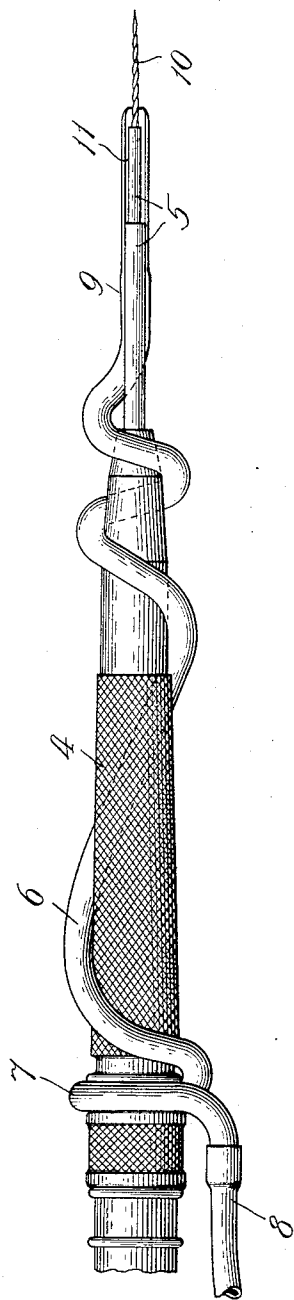


Fig. 3.

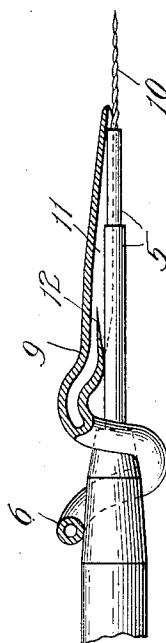
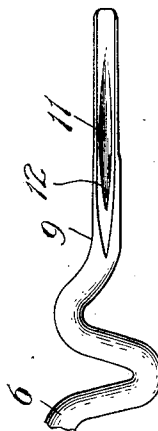


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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DENTAL APPARATUS.

1,039,728.

Specification of Letters Patent.

Patented Oct. 1, 1912.

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To all whom it may concern:

Be it known that I, JOHN M. GILMORE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Dental Apparatus, of which the following is a specification.

My invention relates, more particularly, to improvements in dental apparatus of the type involving a hand-piece, or holder, containing a rotary element adapted to be driven by either manual or machine power and constructed to rotate different constructions of tools or instruments used in operating on teeth, and it has more particular reference to dental apparatus of the type stated equipped with the relatively small, slender tools, as for example broaches, used in the treatment of pyorrhea and similar diseases of the teeth, and also to tools used in prophylactic treatment.

In properly treating pyorrhea it is necessary that the walls of the pockets produced by this disease be thoroughly cleansed of the accumulations caused thereby by brushing them and simultaneously subjecting them to a flushing action, preferably by liquid medicaments for removing such accumulations from the pockets and treating the diseased tissue to restore the gums to normal condition, and the same brushing and flushing action is desirable in prophylactic treatment.

My primary object is to provide dental apparatus of the character referred to which will operate to supply liquid to the revoluble tool in quantities sufficient to produce a relative flushing action without waste of the liquid and with the above-stated advantages.

Referring to the accompanying drawing—Figure 1 is a view in side elevation of dental apparatus constructed in accordance with my invention. Fig. 2 is a view of the outlet end-portion of the liquid-conducting tube shown in Fig. 1; and Fig. 3, a broken view, similar to Fig. 1, of a portion of the apparatus shown therein, but viewed at a 90° angle thereto, and showing a portion of the liquid-conducting tube in section.

The hand-piece of a dental-engine is represented at 4, this hand-piece being provided internally at its outer end with a rotary chuck-member (not shown) which is driven from a flexible rotary shaft (not shown) journaled in the hand-piece and connecting therein with the chuck-member, the outer end of the hand-piece being open to permit a

mandrel, such as that represented at 5, to be inserted therein into clutching engagement with the chuck-member for rapidly rotating the mandrel. As the hand-piece is a well-known form of apparatus and is in practically universal use, the illustration and above description thereof are deemed sufficient.

Surrounding the hand-piece 4 is a tube, or conduit, 6, preferably of metal, which is bent into a spiral and is adapted to be releasably secured to the hand-piece as through the medium of a ring-section 7. The conduit 6 connects at one end, as indicated at 8, with a tube, preferably formed of flexible material such as rubber, which in practice would lead from a source of supply of the liquid to be supplied to the tool hereinafter referred to, carried by the mandrel 6. Where water only is used, the pipe 8 would connect with a faucet or receptacle (not shown) containing the water, and where medicaments are to be employed the tube 8 would be connected with a receptacle (not shown), which would probably be supported above the head of the patient, and be connected at its lower outlet-end with this tube. The outlet-end of the conduits 6, represented at 9, extends along a portion of the mandrel 5 and preferably overlaps a portion of the operating tool 10 connected with the mandrel 5, and is preferably shaped like a quill as illustrated, with the side of the outlet section 9 adjacent to the mandrel and the tool 10 open as indicated at 11, the outlet of the conduit being restricted as represented at 12 to cause the liquid to be ejected along the tool 10 toward its outer end.

It will be understood from the foregoing that when liquid is supplied through the conduit 6 it will escape therefrom through the open side of the outlet 9 and will be discharged against the tool 10 and toward the outer end thereof, with the result of the liquid enveloping the tool, owing to the rapid rotation of the latter, and flowing to the outer end thereof where it serves to perform the flushing operation, the tool in effect operating in a longitudinally directed stream of water. In addition to directing the liquid to the tool 10, the extreme outer end of the section 9 serves to protect the gums when the tool 10 deeply penetrates beyond the gums.

The form of tool 10 illustrated is one which has particular utility in prophylactic treatment and in the treatment of pyorrhea,

and while my invention is designed for use particularly in connection with tools of the type illustrated, it will be understood that my invention may be utilized in connection
5 with many other forms of tools, as for instance brushes, small burs and the like.

While I have illustrated and described a fluid-conducting conduit having an outlet-end of a particular form, I do not wish to be
10 understood as intending to limit my invention to a conduit having this particular form of outlet-end, as it would be within my invention to provide a conduit having an outlet-end the wall of which surrounds the tool-
15 element to a greater degree than that illustrated, even to the degree of entirely surrounding it providing that the fluid is caused to be discharged against the tool element before the liquid leaves the extreme outer end
20 of the conduit.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the hand-piece

of a dental-engine provided with a rotatable tool-element, of a liquid-supply conduit hav- 25
ing an outlet through which the liquid is discharged upon the tool-element before the liquid passes the extreme outer end of the conduit, for the purpose set forth.

2. A liquid-tube for delivering liquid to a 30
rotating tool-element with its outlet-end beveled similar to the end of a quill-pen and with its outlet in a side-wall thereof.

3. The combination with the hand-piece of a dental-engine provided with a rotatable 35
tool-element, of a liquid-supply conduit having its outlet-end extending lengthwise of said tool-element, with its outlet restricted relative to the conduit-proper and located in the side-wall of said outlet-end adjacent to 40
the tool-element, whereby a jetting action is produced.

JOHN M. GILMORE.

In presence of—

AMY C. FISCHER,
R. SCHAEFER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
