No. 879,537. PATENTED FEB. 18, 1908.

J. GARTRELL.

DENTAL IMPLEMENT.

APPLICATION FILED JULY 20, 1907.

Fig. 1.

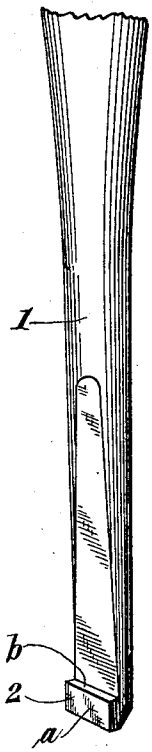


Fig. 2.

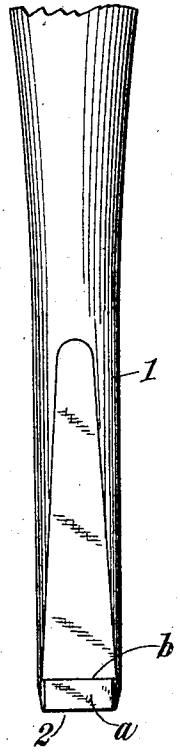


Fig. 3.

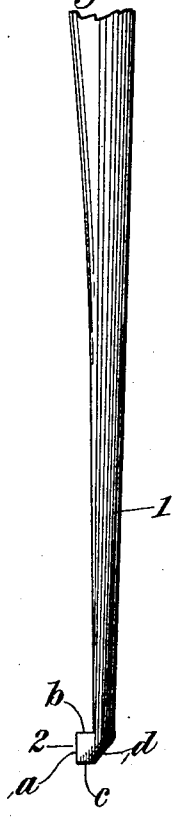


Fig. 4.

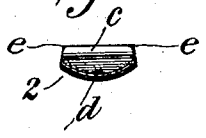
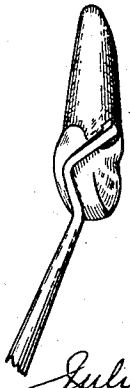


Fig. 5.

Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

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DENTAL IMPLEMENT.

No. 879,537. Specification of Letters Patent. Patented Feb. 18, 1908.

Application filed July 20, 1907. Serial No. 384,781.

To all whom it may concern:

Be it known that I, JULIAN GARTRELL, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Dental Implements; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to dental instruments and is particularly designed and adapted for pyorrhea work or for removing calculus from the roots of the teeth; and the invention consists particularly in the peculiar and novel formation or construction of the operative points of the heads of such instruments, which heads can be formed on any of the various shapes of dental stock forms customarily used in treating the roots of different teeth.

Special objects of the present invention are to provide an instrument for scraping cleaning and polishing the roots of the teeth without grooving, gouging or in any manner injuring the surface of the root or the inclosing membranes. Also to so form the instrument that it will be practically impossible for it to cut in under the process, or healthy junction between the alveolodental membrane and the cementum, and which the sharp and chiseled pointed instruments now used are apt to do, thereby causing great injury to the sensitive peridental membrane and increasing the inflammation which the operator desires to remove. Also to so form the working head of such instrument that it can be operated either with a push or pull motion, thus making it double acting, and which also enables the instrument to be operated with its shank kept close to and parallel with the surface of the root, so that there will not be any strain upon the alveolodental membrane, or the gum, as it is not necessary to turn the shaft of my instrument at an angle to the surface of the root to make it take an operative hold thereon, whereas many of the present used scalers have to be operated at angles and frequently so extend and loosen the membrane or gum that the healing process, or adhesion of the alveolodental membrane to the cementum, is greatly retarded, and is a source of increased discomfort to the patient.

The invention in brief consists in making the head of the instrument square and blunt, the head being substantially at right angles to the shaft or shank and being honed flat on the surface which is to rest upon and slide over the cementum surface of the root, while the outer and inner end walls of such head are practically perpendicular to this bearing surface, thus presenting sharp square edges at top and bottom of this head, which edges will effectively scrape and polish the root without gouging or cutting it. As the head has no beveled or sharpened edges (other than right angles) it is impossible for it to cut into or in any manner gouge, groove or roughen the surface of the root, and as above stated the head can be operated either with a push or a pull motion, and being blunt and square upon its extreme ends it can be used to effectively remove the innermost portion of the calculus or deposit without injury to the healthy membrane and without having to cut the latter or tear it loose. The removal of this innermost portion of the calculus is most important as it is the encroaching portion of the deposit which works down toward the end of the root and gradually separates the cementum of the tooth from the alveolodental membrane, thus causing the loosening of the tooth and its ultimate loss, unless the progress of the disease is checked.

The accompanying drawing illustrates an implement embodying the invention, said drawing being greatly magnified as compared with the actual instrument for the purpose of enabling the peculiar formation of the head to be readily understood.

Figure 1 is a perspective view of the shank of an instrument having a head embodying the invention and enlarged about eight times. Fig. 2 is a face view of Fig. 1. Fig. 3 is an edge view; and Fig. 4 is an end view thereof. Figs. 5 and 6 illustrate the invention as applied to some of the different shank forms used in treating pyorrhea.

The shank 1 of the instrument may be straight, curved, goose-necked, cow-horned, flat or any other form desired, such as are necessary or used to reach the roots of the various teeth. On the extremity of this shank is formed the operative head 2 which stands substantially at right angles to the shank and has a flat plane bearing surface *a* adapted to rest upon the surface of the root, and which can be pressed firmly thereagainst without any possibility of injuring the cementum. The head has an inner working angle or face *b* which is at right angles or per-

pendicular to the surface *a*, and has an outer or under working face *c*, also at right angles or perpendicular to the surface *a*. The surface *b* operates on "pull" motions of the shank; the surface *c* operates on "push" motions thereof. The working faces *b* and *c* being at right angles to surface *a*, cannot gouge into the root, and they operate effectively only when the surface *a* is bearing closely against the surface of the root.

The side corners *e*, *e*, of the head (see Fig. 4) are slightly rounded by dressing them off on a hone so that if there should be a slight lateral twist or turn of the shank while the implement is in use these edges will not gouge or groove the root. As the square working edges *b*, *c*, of the instrument are at right angles to the plane bearing surface *a* and to the shank 1, it is practically impossible to tilt the shank upon the root so that such edges would gouge the surface of the tooth and the implement operates effectively when the shank is kept parallel with and close to the surface of the root of the tooth being operated upon. The inner working face *c* being blunt will not cut or pry under the healthy tissue as a bevel pointed or knife implement would do, and will not cut or shave the root like chisel or knife edged tools will do. With my instrument every particle of deposit can be loosened and removed and the root polished without being cut, shaved or striated. The extremity of the shank, adjacent surface *c*, is rounded as at *d* so that the gum or alveolodental membrane will not be injured when the head is inserted thereunder.

Figs. 5 and 6 show the invention applied to implements for cleaning the distal surfaces of the left central tooth,—Fig. 5 showing a form of shank especially adapted for working lengthwise of the root, and Fig. 6 showing a form of shank especially adapted for working round the cervical margin or line of such tooth. The particular form of the shanks is not claimed herein,—the invention residing in the peculiar shape of the head of the instrument, as above described, which head is applicable to any desired form of shank.

It will be observed that the present invention presents no chisel edges or knife edges such as have been heretofore employed in pyorrhea implements, one object of the invention being to avoid such constructions, for the reason that it is almost impossible to use such sharp and chisel implements without shaving, cutting or injuring the alveolodental membrane, or peridental membrane, or gouging or changing in any manner the surface of the root, or cementum, all of which mishaps are painful to the patient and retards the healing process.

By reason of the head 2 having the inner working surface *b* and outer working surface *c* each instrument constructed in accordance with this invention becomes practically duplex and can be operated either with a pull or push motion; this results in a great saving in the number of implements required in a complete set for treating pyorrhea.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. A dental instrument for pyorrhea work having a head provided with a plane bearing surface adapted to contact with and bear against the surface of the root and having working surfaces at its opposite ends perpendicular to said plane surface, whereby said instrument is adapted to be used either with a pull or push motion.

2. A dental instrument for pyorrhea work having a head provided with a perpendicular working surface at one end and a plane bearing surface perpendicular to said working surface and adapted to rest upon the surface of the root while the instrument is in use.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

JULIAN GARTRELL.

Witnesses:

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ARTHUR E. DOWELL.