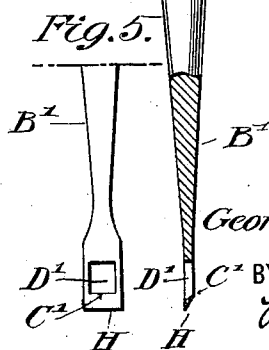
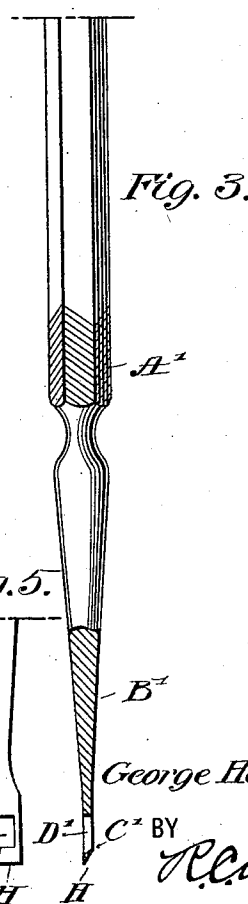
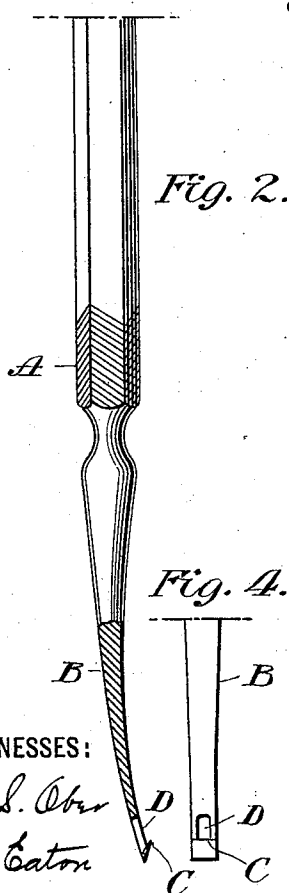
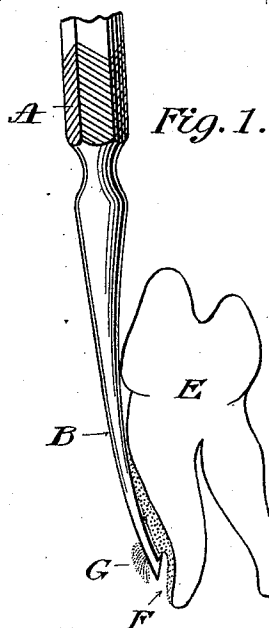


(No Model.)

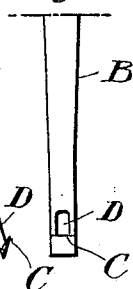
G. H. WINKLER.
DENTAL TOOL.

No. 575,750.

Patented Jan. 26, 1897.



WITNESSES:
Paul S. Ober
C. B. Eaton



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UNITED STATES PATENT OFFICE.

GEORGE HOWE WINKLER, OF NEW YORK, N. Y.

DENTAL TOOL.

SPECIFICATION forming part of Letters Patent No. 575,750, dated January 26, 1897.

Application filed June 25, 1896. Serial No. 596,878. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HOWE WINKLER, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Dental Instruments, of which the following is a full, clear, and exact specification.

My invention relates to an improvement in dental instruments; and it consists in the improved mechanical construction, hereinafter described, of the tools used for removing calcareous or other deposits or operating in a case of necrosed bone. My invention is, however, particularly efficient in removing concretions that may have formed upon the roots of teeth.

The objects of my invention are to provide an instrument which will rapidly and efficiently perform the function for which it is intended and which will lessen the liability to lacerate or otherwise injure the surrounding gum or alveolar process and thereby reduce the pain attending said operation, said instrument being self-clearing during the cutting or scraping process, thereby expediting and rendering more efficacious the operation.

The instruments to which this improvement primarily relates are chisels, scalers and scrapers, excavators, and the like.

In the disease termed "pyorrhœa alveolaris" (Riggs's disease) calcareous deposits are found firmly adhering to the roots of teeth, forcing the surrounding tissue away and slowly but surely causing the teeth to become badly loosened. The first step in the treatment of the disease consists in removing the deposit by the use of chisels, scalers, or other suitable instruments, which are inserted between the root and the surrounding gum and by means of which the concretion is attacked and broken up. As the operation is attended with much pain and oftentimes severe laceration of the gums, it is most desirable that a tool be provided which will not clog up with the detached fragments of the calculus, thereby retarding the progress of the operation, or which will not act to pack the said fragments into a mass, which would tend to force the gum still farther away from the tooth and add materially to the attending pain.

My invention is illustrated by the accompanying drawings, in which—

Figure 1 is a side elevation of an instrument, on an enlarged scale, containing my invention in operation. Fig. 2 is a side elevation of the instrument illustrated in Fig. 1, the lower end of the said instrument being shown in section. Fig. 3 is a side elevation of a modification of my invention, the lower portion of the tool being shown in section. Fig. 4 is a front elevation of the lower end of the instrument illustrated in Fig. 2, and Fig. 5 is a front elevation of the instrument shown in Fig. 3.

The instrument illustrated in Figs. 1, 2, and 4 is commonly termed a "scaler," comprising a handle portion A and a blade B. Toward the lower end of the blade B there is formed an upwardly-directed cutting edge C. D is a perforation adjacent to said cutting edge for the purpose of making the tool what may be termed "self-clearing."

E, Fig. 1, is a tooth, upon one of the roots of which is a hard calcareous deposit F.

In operation the thin blade of the scaler is inserted between the gum and the root of the tooth, and by a drawing motion the cutting edge C engages with and breaks up the said calcareous deposit.

The fault found with the instruments now commonly in use is that the delicate cutting edge is clogged up by the detached fragments of the calculus, so that the progress of the operation is materially retarded, inasmuch as the instrument has to be frequently removed and cleaned. To overcome this serious objection and to render the instrument self-clearing during the process of breaking up and removing the concretion, I have provided at a point closely adjacent to the cutting edge a perforation D, through which the broken-up particles G of the calculus pass, as illustrated in Fig. 1. By this means the efficiency of the tool is materially increased and the operation rendered more effective and less painful.

In Figs. 3 and 5 I have illustrated a modification of my invention, the said modification consisting, primarily, in providing an outwardly-directed cutting edge H, as well as an inwardly-directed cutting edge C', so that the instrument illustrated in the said figures may

perform the function of a chisel as well as a scaler. A' is the handle of the combined scaler and scraper. B' is the blade thereof. At the lower extremity of the blade B' there is provided an outwardly-projecting cutting edge II, so that the instrument may be used as a chisel adapted to remove the calcareous deposit by a stroke directed from the crown toward the root of the tooth, involving a pushing motion. D' is a perforation closely adjacent to the end of the instrument and directly adjacent to the cutting edge C'. When the instrument is used as a chisel, the broken-up fragments of the foreign deposit enter the perforation D, which forms a pocket by which a portion of the deposit may be removed by withdrawing the instrument. By providing the said pocket D' more room is afforded between the tooth-root and the gum, so that with a given quantity of broken-up calculus the gum is not pressed away from the tooth as much as when a solid chisel is used.

The above-described tool may be used wherever it is desirable to scrape or otherwise operate on a bony structure, whether surrounded by a tissue or not.

It is apparent that in carrying out my invention some changes in the particular construction shown and described may be desir-

able, and I would therefore have it understood that I do not limit myself to the specific construction shown, but leave myself at liberty to make such changes as are justly within the spirit and scope of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a dental instrument a thin blade provided with a cutting edge toward its lower extremity, and a perforation in said blade closely adjacent to said cutting edge, substantially as and for the purposes described.

2. In a dental instrument a thin blade having an upwardly-directed cutting edge, and a perforation or clearance-opening through said blade adjacent to said cutting edge.

3. In a dental instrument a blade having a cutting or chisel edge formed at its outer extremity, a perforation through said blade closely adjacent to said cutting edge and forming an upwardly-directed cutting edge directly adjacent thereto, substantially as described.

GEORGE HOWE WINKLER.

Witnesses:

GEORGE HOWE WINKLER, Jr.,
JOHN E. DONOVAN.