

(No Model.)

E. M. FREDERICKS.
DENTAL EXCAVATOR.

No. 567,589.

Patented Sept. 15, 1896.

Fig. 1.

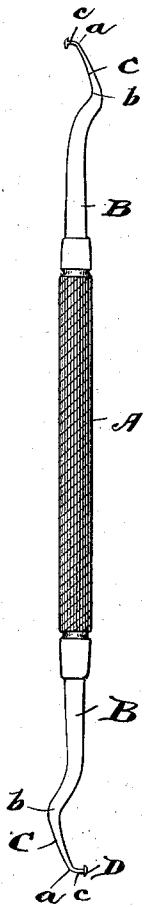


Fig. 3.

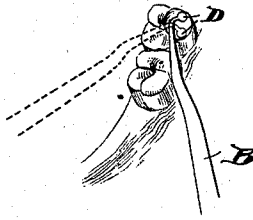


Fig. 2.



Fig. 4.

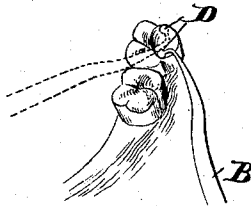


Fig. 5.



Witnesses,

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ENOCH M. FREDERICKS, OF CHICAGO, ILLINOIS.

DENTAL EXCAVATOR.

SPECIFICATION forming part of Letters Patent No. 567,589, dated September 15, 1896.

Application filed November 25, 1895. Serial No. 570,069. (No model.)

To all whom it may concern:

Be it known that I, ENOCH M. FREDERICKS, of Chicago, Illinois, have invented certain new and useful Improvements in Dental Excavators, of which the following is a specification.

My invention has for its object to provide for the use of dentists a tool of the excavator type of such construction as to take the place of several separate instruments now commonly employed in the preparation of cavities.

In the accompanying drawings, Figure 1 is a plan view of an excavator having working points or tools on the opposite end of a common handle. Fig. 2 is a view of the same at right angles to the view shown in Fig. 1. Figs. 3 and 4 are perspective views illustrating by the full and dotted lines, respectively, the manner of working upon cavities. Fig. 5 is an end view showing the manner of disposing of the working point with relation to the body of the instrument.

In the preferred embodiment of my invention I mount an excavator upon each end of the handle member A. The excavator consists of the body or shank B, having the reduced offset portion C, joined by a curved neck *c* to the working-point D. Said working point is of the spoon type.

By reference to Fig. 5 it will be observed that the instrument when turned into one position brings the offset portion C in line with the shank and handle, while the neck and spoon project beyond said plane, the spoon being turned at substantially right angles thereto. The excavators shown here are of the same construction except that the working points of the pair connected to a common handle are turned in opposite directions with reference to said handle, thereby constituting right and left tools.

The provision of two tools having working points of like configuration but reversed as to direction or disposition upon the same handle enables the operator to work upon all portions of the cavity and upon a variety of cavities without changing the tool except to reverse it in the hand. For example, for the cavity shown the right-hand tool, *i. e.*, the one represented on the upper end of the instrument, Figs. 1 and 2, will be employed for

that portion of the operation shown in Fig. 3, the cutting edge being turned up or with the rounded portion of the spoon down. If the instrument be inserted in the position shown in the full lines, Fig. 3, the spoon will cut the outer rear portion of the cavity. If inserted in the position shown by the dotted lines, Fig. 3, the spoon will cut the front walls of the outer portion of the cavity. For treating the remaining portion of the cavity the left-hand tool may be employed, as shown in Fig. 4, and the instrument when inserted in the position shown by the full lines of said figure will enable the operator to cut away the inner front wall and bottom of the cavity, and when inserted from the lingual side, or in the position shown by the dotted lines, will enable the cutting away of the rear inner walls of the same cavity. Thus by the employment of this single tool all portions of the cavity illustrated can be successively operated upon.

It will be understood that the cavity represented is typical only, and that the tool might be employed for treating cavities of widely variant form, and that therefore the tool is capable of use in a wide range of operations.

It will be observed that the shank of the excavator adjacent to the point is offset or disposed in a plane oblique to the body of the shank and to the handle. I prefer to dispose the portion from *a* to *b* at an angle of about thirty degrees to the shank and to turn the cutting-point substantially at right angles to such offset portion. The angle of the offset portion may vary, but it should in all cases be wide enough to enable it to pass the tooth under treatment or the one adjacent to the tooth under treatment. By thus disposing a portion of the shank in a plane intersecting the plane of the handle and main body of the shank, it will be found that the implement may be used in many situations where it would be impossible to use a tool with a straight shank having an offset cutting-point. This construction enables the operator to reach all portions of a cavity with the same tool, the curved or offset neck permitting the point to be applied without interference by the adjacent tooth, while the curved neck permits the tool to clear itself of tooth

matter. In use the tool is rocked or rotated and the junction of the shank and the neck is in the plane of the axis of rotation, while the cutting edge of the spoon extends slightly
5 beyond the plane of the perimeter of the handle and moves in the arc of a circle which is concentric to the axis of rotation and to the perimeter of the handle.

I claim—

10 . A dental excavator, comprising in combination with the handle, shanks attached thereto, said shanks having their bodies offset near their ends and terminating in necks having

working points disposed respectively in opposite directions from each other, the junctions of the shanks and necks being substantially in the axis of rotation and the cutting edges of the working points being outside of and eccentric to said axis and moving when the handle is rotated, in arcs concentric to
20 said axis and to the perimeter of the handle, substantially as described.

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Witnesses:

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