

(No Model.)

E. C. MOORE.  
DENTAL TOOL.

No. 478,881.

Patented July 12, 1892.

Fig. 2.

Fig. 1.

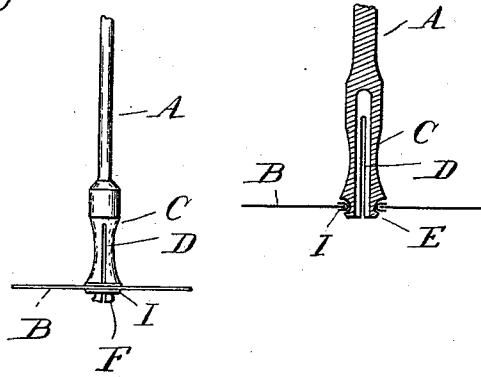


Fig. 4.

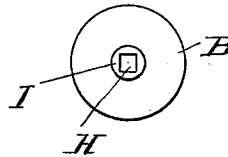


Fig. 3.

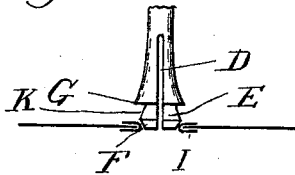


Fig. 5.

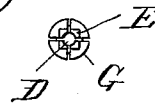
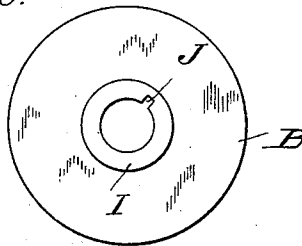


Fig. 6.



Witnesses  
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# UNITED STATES PATENT OFFICE.

EDWARD C. MOORE, OF DETROIT, MICHIGAN.

## DENTAL TOOL.

SPECIFICATION forming part of Letters Patent No. 478,881, dated July 12, 1892.

Application filed January 29, 1892. Serial No. 419,631. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD C. MOORE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Dental Tools, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in dental tools; and it relates to that class of tools adapted to be used in a dental engine for polishing, cleaning, grinding, &c.

The invention consists in the peculiar construction of a mandrel and of disks for grinding, polishing, &c., adapted to be secured to the mandrel, whereby the construction is simplified and cheapened, and whereby the disks may be more readily secured to and detached from the mandrel, and whereby it can be used with the engine running in either direction, all as more fully hereinafter described.

In the drawings, Figure 1 is a side elevation of my improved tool, showing the disk in position. Fig. 2 is a vertical central section thereof. Fig. 3 is an enlarged side elevation showing the end of the mandrel engaging into the socket in the disk. Fig. 4 is a plan view of the disk. Fig. 5 is an elevation of the mandrel. Fig. 6 is a plan view of a disk.

My invention is designed to operate in connection with an ordinary dental engine having a flexible revolving shaft, into which a mandrel A is inserted.

B is a disk for polishing, &c., preferably made of paper or some similar flexible material coated with some grinding-surface, such as emery. Dentists ordinarily employ a series of these disks having grinding-surfaces of different degrees of fineness, and in operating it frequently happens that numerous changes are required to be made for coarse grinding, finer grinding, polishing, &c.

Heretofore the mandrel has ordinarily been provided with a screw-threaded aperture, in which a screw is adapted to engage after passing through an aperture in the grinding or polishing disk, the head of the screw when turned up clamping the disk upon the end of the mandrel. Thus to effect the change of disk the dentist would necessarily remove the

screw and disk and insert a new one, which would occupy considerable of his time. It has been customary, also, to form a hub upon such disk with a screw-threaded shank adapted to engage into a socket in the end of the mandrel. This required such a hub for each disk and added materially to the expense of manufacture, without lessening materially the labor required to make the change. My invention is intended to overcome these difficulties and to so construct the mandrel and disk as to enable the operator to attach and detach the disk by a slight pressure, and at the same time firmly secure the disk upon the mandrel for use. To this end upon the mandrel A, I form a tubular head C, preferably of spring metal, and at two or more points I form longitudinal slots D, so arranged that the separated portions of the head may be slightly compressed, but each one of sufficient resiliency to return to its normal position when the pressure is released. At the lower end of this head I form an extension E, terminating in the beveled shoulder or head F, a shoulder G being formed at the juncture of the extension and the head, as plainly shown in Fig. 3. This extension is preferably rectangular, as shown in Fig. 5, and is adapted to engage in a squared aperture H in the hub I, formed in the disk. The hub I preferably make of substantially rigid material. It is preferably formed by taking a short section of a metallic tube and clamping the ends thereof upon the disk in the ordinary manner of securing an eyelet in position. This hub may have a rectangular opening, as shown in Fig. 4, corresponding with the shape of the extension E, or it may be circular, with a spline or rib to engage in a notch or groove J, as shown in Fig. 6, or triangular, or any other means may be employed by which when the mandrel is engaged into the disk the disk will be carried with the mandrel in its rotation.

The construction which I have described for the end of the mandrel forms what is substantially an expanding spring-chuck, and, while I prefer the construction which I have shown, I do not desire to limit myself to the same.

In practice the dentist can lay out upon his bracket-table, which is usually provided with a cloth like velvet or brilliant-cloth or other

soft top, such of the disks as he may desire to use. When he wishes to engage one upon the mandrel, he can simply register the spring-chuck with the aperture in the hub, as shown in Fig. 3, and then by pressing down the bevel on the shoulder F will compress the jaw of the chuck and allow the extension to pass through the aperture in the hub. As soon as it has passed through the jaws will again expand, tightly clamping the disk between the shoulders G and F. To remove it, the operator presses upon the upper face of the disk, and the hub, bearing upon the incline K of the shoulder F, will compress the jaw and allow the disk to drop off, leaving it ready for the attaching of another one in the manner described.

What I claim as my invention is—

1. In a dental-disk holder, the combination, with an apertured disk, of a mandrel having two or more spring-arms formed with seats

on their outer faces arranged to correspond with the shape of the aperture in the disk, substantially as described.

2. The combination, with a dental disk having a rigid hub, of a mandrel terminating in a spring-chuck adapted to engage said hub to detachably secure the disk upon the mandrel, substantially as described.

3. The combination, with a dental disk having a rigid apertured hub, of a mandrel terminating in an expanding spring-chuck, the shoulder F, beveled upon both sides, and the shoulder G, forming a stop for the hub, substantially as described.

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

EDWARD C. MOORE.

Witnesses:

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N. L. LINDOP.