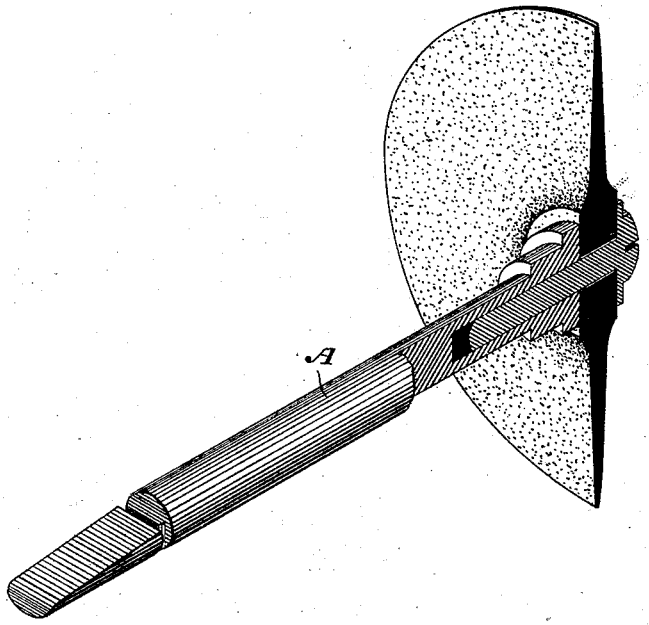
E. T. STARR.

Abrading Tools for Dental Purposes.

No. 207,079. Patented Aug. 13, 1878.



WITNESSES

Wm A Skinkle

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UNITED STATES PATENT OFFICE.

ELI T. STARR, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO SAMUEL S. WHITE, OF SAME PLACE.

IMPROVEMENT IN ABRADING-TOOLS FOR DENTAL PURPOSES.

Specification forming part of Letters Patent No. **207,079**, dated August 13, 1878; application filed July 10, 1878.

To all whom it may concern:

Be it known that I, ELI T. STARR, of the city and county of Philadelphia, in the State of Pennyslvania, have invented certain new and useful Improvements in Grinding, Polishing, Cutting, and Separating Disks or Tools for Dental Purposes, of which the following is a specification:

Heretofore cutting disks or wheels adapted for dental purposes have been constructed either of a homogeneous mass or composition of cutting or abrading material, such as corundum molded or brought to the desired form, or of a thin soft-metal body, such as copper, with the grinding or cutting crystals, grit, or material pressed into its working-surface.

The disks composed of a compound or homogeneous mass have been found by experience to be defective and unreliable, being non-elastic, brittle, and liable to chip or break off at the edges or entirely in two, while the metal disks are also practically non-elastic, and, moreover, comparatively expensive, the crystals, grit, or cutting material soon wearing out or separating from the metal body, consequently rendering the disk useless.

The object of my present invention is to furnish a cutting and polishing disk especially designed for separating or spacing adjacent teeth, and or polishing dental fillings, which shall be cheap, efficient, thin, and flexible and very tough, whereby the disk will be capable of yielding slightly to accommodate the surface upon which it is working, and all danger of breakage and chipping off of pieces be prevented.

To these ends I form the body of the disk or wheel of celluloid—a material well known in the arts, and capable of being readily molded or brought to the desired form or shape, and impress, force, or roll into its working-surface the grinding, cutting, or abrading material or crystals.

I have discovered, after considerable experiment and study, that celluloid is a material of such a nature that it possesses the qualities or properties requisite for the attainment of the objects of my invention; and have also discovered that the crystals or grinding material, if loosened during the working of the disks, will be merely rolled over and embedded in a fresh place by the pressure or friction that loosens them instead of separating entirely from the celluloid body, whereby the efficiency of the disks is preserved.

Were the crystals or cutting material mixed or compounded with the celluloid, much of the cutting material would be practically lost, being in the body or heart of the disk, and the toughness of the disk would also in a great measure be destroyed.

By the employment of celluloid the disks may readily be made of different colors, whereby to distinguish different grades of cutting material or crystals, or disks of different cutting qualities, which will be a considerable desideratum to dentists in saving time and preventing mistakes in the selection of disks for the different classes of work or for the different operations to be performed.

The accompanying drawing represents a perspective view, partly in section, of my improved disk as attached to a mandrel or spindle, A, of well-known construction, the driving end of which is provided, in this instance, with a flattened or tapering end and locking-groove, to adapt it to the rotary tool-chuck and locking mechanism of the hand-piece of the well-known S. S. White dental engine, whereby the disk is revolved at a high rate of speed, and is given a wide range of movement in various directions by the flexibility of the driving mechanism.

The disk is preferably made of the form shown, with an increased thickness of celluloid at the center, which constitutes the hub, by which it is secured upon the mandrel, and gradually tapering on both sides to a thin cutting-edge.

The disks may, of course, be made of different sizes and of different colors, for the purpose hereinbefore stated, and will also have the crystals or cutting material forced or rolled into their surfaces in well-known ways.

I am aware that grinding, cutting, and polishing tools have heretofore been made or suggested consisting of celluloid mixed or compounded with abrading or cutting material, the two forming a homogeneous mass; but this differs radically from my invention.

I claim as my invention—

1. A dental cutting and polishing disk or wheel formed of celluloid, with grinding, cutting, or abrading material forced or rolled into its surface.

2. A dental cutting and polishing disk formed of celluloid, with grinding or cutting material forced or rolled into its surface, in combination with a mandrel or spindle, by which it is adapted to be rotated.

In testimony whereof I have hereunto subscribed my name.

ELI T. STARR.

Witnesses:
J. A. B. WILLIAMS,
W. R. POTTER.