R. ARTHUR.

# Dental-Tools for Separating Teeth.

No. 133,617. Patented Dec. 3, 1872.

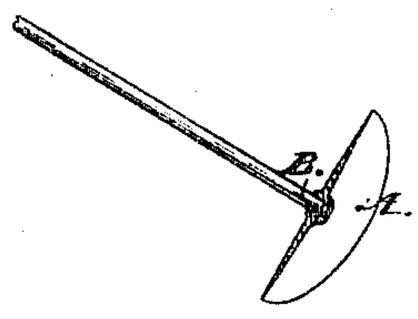
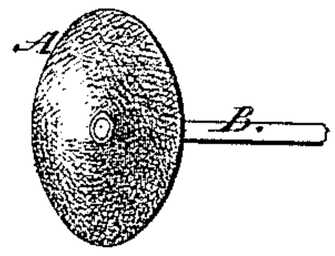



*Fig. 1.*

*Fig. 2.*




**Witnesses:**

Solon Kemon

Thos. L. L. Durand

**Inventor:**

Robert Arthur M.D. D.D.S.

PER Munn & Co

**Attorneys.**

# UNITED STATES PATENT OFFICE.

ROBERT ARTHUR, OF BALTIMORE, MARYLAND.

## IMPROVEMENT IN DENTAL TOOLS FOR SEPARATING TEETH.

Specification forming part of Letters Patent No. 133,617, dated December 3, 1872.

*To all whom it may concern:*

Be it known that I, ROBERT ARTHUR, M. D., D. D. S., of Baltimore, in the county of Baltimore and State of Maryland, have invented an Improvement in the Art of Dentistry, of which the following is a specification:

The invention relates to the custom of separating or spacing adjacent teeth because their contact-surfaces are decayed or liable to decay. Extended observation renders it more than probable that in about ninety per cent. of children decay takes place on the surfaces between the teeth, the tendency being the least in the lower incisors. On the other hand it is equally well settled that this decay can be arrested, after having commenced, if the decayed portions of the affected surfaces are completely removed, and the teeth permanently separated; or may be entirely prevented if the teeth are spaced and their surfaces permanently separated before the decay begins. Hence the dental profession is at present recommending and performing a great deal of this work; and in a large proportion of cases the teeth are entirely or nearly sound. Under these circumstances it becomes necessary to operate upon and remove a portion of the sound enamel, which is an extremely hard substance. Files, rotating burrs, and small chisels are the only dental tools which have been heretofore employed for this purpose; and these cannot be manipulated so as to act otherwise than very slowly, for the most part painfully, and always disagreeably. As this branch of the art has become more and more important, and has worked its way more and more into favor, the lack of an adequate dental tool has been extensively felt, and has caused dentists to think and experiment on the subject. After much reflection and study upon the subject I conceived the idea of a rotary tool, in the form of a disk, drawn down nearly to an edge on its periphery, sufficiently to cut, saw, or grind, and preferably, though not necessarily, with backwardly-tapered sides or grinding-surfaces, which will slightly abrade the proximate surfaces of the teeth, make room for its own freedom of motion or clearance, and enlarge the slit made by the edge of the tool. Experiment has demonstrated to me that these disks must be from a half-inch to an inch in diameter, in order to enable them to be held parallel to the proximate surfaces of the teeth, and easily revolved between them and to effect the separation from the grinding-surfaces to the gum. Any variations from these dimensions have been found practically inoperative for this purpose.

In the accompanying drawing, Figure 1 is a sectional perspective view of my improved dental tool, and Fig. 2 is an end view of the same.

A represents a disk, formed of corundum, drawn to an edge of greater or less acuteness, and, on the sides, beveled a little inwardly toward the center. B is a mandrel, to the end of which the disk is rigidly attached. This mandrel is then placed in a dental lathe and revolved, while the ordinary flexible connections allow all the mobility necessary for its adjustment by the hand of the operator.

Of course any substance which has the property of grinding by sliding or rotary friction, and can be brought to the required form and dimensions, will answer the purpose

I have proved, by comparative experiments, to my entire satisfaction, that the spacing can be done by my method in a greatly less period of time, with much less pain and annoyance, and in a much more workmanlike manner than by the use of files and chisels. By this process, also, the arrest or prevention of decay, which constitutes the great object, is much more certainly accomplished. It is, of course, necessary that these disks should be made sufficiently thin for the required purpose.

In making use of these disks it is preferable to employ those of the smallest suitable diameter to commence the separation, and remove the thicker parts of the enamel of the edges of the grinding-surfaces, and then to exchange them for those of larger diameter as the distance from the grinding-surface increases. As the extreme limit of the separation is reached, the disk should have a knife-edge, so that the final portion of the separation shall be as slight as possible, forming a projection of this portion of the teeth, which will prevent the other parts of the surfaces, which must be more widely separated, from touching. In order to prepare the rudely-formed disks, made of corundum and shellac, so as to be readily reducible in thickness, I immerse them in alcohol

for a few minutes. The surface then becomes softened by the solution of the shellac, and can be scraped by a metallic tool having a tolerably sharp edge. After this process is repeated a few times the disk is or may be made as thin as ordinary writing-paper. Toward the close of the process described, in order to avoid the danger of softening the disk too much, and thus rendering the edge too friable, it will be found advantageous to complete the operation with a carbon tool, grinding down with it such portions of the disk remaining to be reduced; or the operation of thinning may be entirely performed with the carbon tool.

I do not wish to confine myself to the process described for reducing the disk to the proper thickness for use; but wish to be at liberty to use any process or method which will best accomplish the result.

Knowing that this invention is original with me, and that it is calculated to be useful to the public, I crave the protection of the patent laws, and claim as new—

A tooth-spacing dental tool, made of an abrading or grinding disk, A, from one-half to one inch in diameter, drawn nearly to an edge on the periphery, either perfectly flat or slightly beveled toward the center, and adapted to be rotated between the teeth, in the manner and for the purpose described.

ROBERT ARTHUR, M. D., D. D. S.

Witnesses:

GEO. ARTHUR,

G. E. SANGSTON.