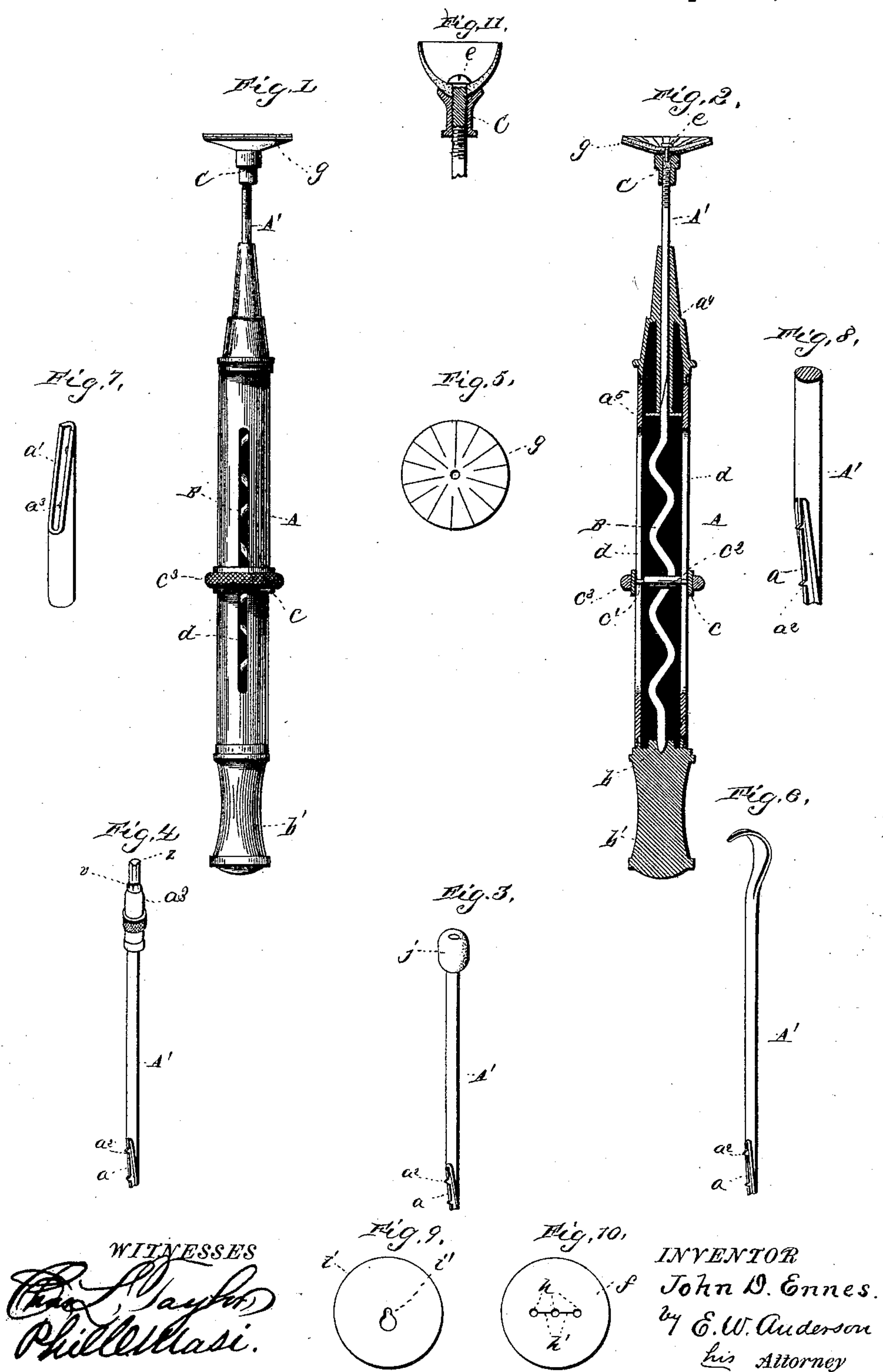


(No Model.)

J. D. ENNES.  
DENTAL POLISHING TOOL.

No. 451,371.

Patented Apr. 28, 1891.





# UNITED STATES PATENT OFFICE.

JOHN D. ENNES, OF NORFOLK, VIRGINIA.

## DENTAL POLISHING-TOOL.

SPECIFICATION forming part of Letters Patent No. 451,371, dated April 28, 1891.

Application filed July 18, 1890. Serial No. 359,160. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN D. ENNES, a citizen of the United States, and a resident of Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Dental Tools; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view. Fig. 2 is a vertical section. Figs. 3, 4, 5, 6, 7, 8, 9, 10, and 11 are detail views showing modified forms of the mandrel and illustrating the several disks employed.

This invention relates to certain improvements in tools for use by dentists in polishing and other work in the mouth; and it consists in the novel construction and combination of parts hereinafter described and claimed.

In the drawings, A refers to the hollow hand-piece, preferably of hard rubber, containing the mandrel A', projecting from the smaller or tapering end thereof and connected or coupled to one end of a spiral or serpentine spindle B, also contained within said hand-piece. The connection or coupling between the mandrel and spindle is effected in any suitable manner—as, for instance, by halving their meeting ends on a diagonal line and providing said ends with an interlocking spline and groove  $a a'$ , said spline having studs  $a^2$  engaging sockets  $a^3$  in said groove, and inclosing the same in a sleeve  $a^4$  centrally in said hand-piece, a washer  $a^5$  being fitted on said spindle, limiting by contact with said sleeve the insertion of said spindle.

The spindle B is stepped and bears at its other end in a cavity or depression  $b$  in the removable cap  $b'$  on one end of the hand-piece A, and fitted upon the outside of the latter is a slide  $c$ , carrying a cross-pin  $c'$ , working in slots  $d$  in the hand-piece, and preferably armed with a sleeve  $c^2$ , engaging and revolving or reciprocating said spindle, said slide also having an outside ring  $c^3$  or studs for its easy manipulation.

The mandrel  $a$  has secured, practically in a fixed manner, in its outer end a headed pin

or screw  $e$ , and upon said mandrel, near said end, is a screw-sleeve C, forming, with the head of said pin or screw, a clamp for holding upon said pin either a paper disk  $f$  or one or more rubber disks  $g$ , each having a central aperture for its insertion on said mandrel, this being effected by distending said opening sufficiently to permit the passage of the head of said pin.

The sleeve C has a smaller and a larger or cup-shaped end, and is reversible, and when a paper disk is being held its smaller end is presented next to said disk; but when the rubber disk or disks are being held the position of the sleeve is preferably reversed, presenting its larger or cup-shaped end toward said latter disk or disks, a screw-collar  $a^2$  screwed upon the mandrel, throwing the outer disk up into conical form.

The paper disk is coated with an abrasive substance or powder—as, for instance, cuttle-fish-bone powder in dentistry—for polishing “fillings” and the removal of superficial decay from the teeth, and is provided with a series preferably of three holes  $h$ , intersected by slits  $h'$  to permit the ready slipping of the disk or disks over the head of the pin or screw  $e$ , and the adaptation of said disk to mandrels of any form.

In order to provide a stiffening for the paper disks, it is or may be backed by a thin metal disk  $i$ .

The inner one of the rubber disks is thinner than the outer disk and is unslitted; but the latter is provided with a series of radial alternating longer and shorter slits at its margin, and in practice the disks are moistened in water and dipped into or coated with a dentifrice powder or soap, and, being of a non-absorbent material, they will not retain any impurities from use, while the gums are not liable to be injured in their use. These disks, including the paper ones, are easily produced and at little expense, thus rendering the brush inexpensive and readily constructed.

The backing metal disk  $i$  has an approximately key-hole-shaped opening  $i'$  to permit of its ready application to any kind of mandrel, as may be desired. The brush hand-piece may also be made of celluloid or metal properly drawn into shape.

In the modifications as disclosed in Figs.



3 and 4 are shown a form of mandrel particularly adapted for carrying a globular piece of felt *j*, and also a form of mandrel constituting what I term my "porte polisher" mandrel, also having a screw-collar *a*<sup>3</sup>, which, when screwed up, causes the slotted or slitted crimped sleeve-lips *v* (which have some resistance) to tighten upon a piece of soft wood *z*, thus preventing the wood from turning within the same. This piece of wood is also charged with an abrasive powder for use in removing stains from the teeth otherwise incapable of removal.

In the modification of Fig. 6 is shown a "scaler" or form of instrument for removing tartar from the teeth, also capable of use in connection with my hand-piece.

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

1. In a rotary tooth-brush, the mandrel having a fixed headed pin or screw at its free end and fitted with a reversible sleeve to secure a paper or rubber disk thereon, substantially as set forth.

2. In a rotary tooth-brush, the rubber disks, each having a central opening, and one thin and the other thick, and provided with a series of radial alternating long and short slits, said disks forming the brush proper, and the reversible sleeve securing said disks upon the mandrel, substantially as set forth.

3. In a rotary tooth-brush, the combination, with the mandrel having a headed pin or screw and a reversible sleeve having a small

and a large cup-shaped end, of the disk held between the head of said pin and either end of said sleeve, substantially as specified.

4. The rotary tooth-brush having the hollow hand-piece, the spiral spindle, the mandrel carrying the disk or disks and connected or coupled to said spindle, and the slide having a cross-pin provided with a sleeve and working in slots in said hand-piece and engaging said spindle, substantially as set forth.

5. The rotary tooth-brush having the hand-piece, in combination with the spindle and mandrel having an interlocking spline or groove, said spline having studs engaging sockets in said groove and inclosed in a fixed sleeve in said hand-piece, substantially as set forth.

6. The combination, with the mandrel and the paper disk carried thereby, of the metallic disk having the approximately-key-hole shaped opening to receive the mandrel, said metallic disk serving as a backing for the paper disk, substantially as described.

7. The paper disk having the central perforation, the perforation on either side thereof, the three lying in a right line, and the slit connecting said perforations, substantially as specified.

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

J. D. ENNES.

Witnesses:

WM. G. WILBERN,  
E. A. CULLEN.