

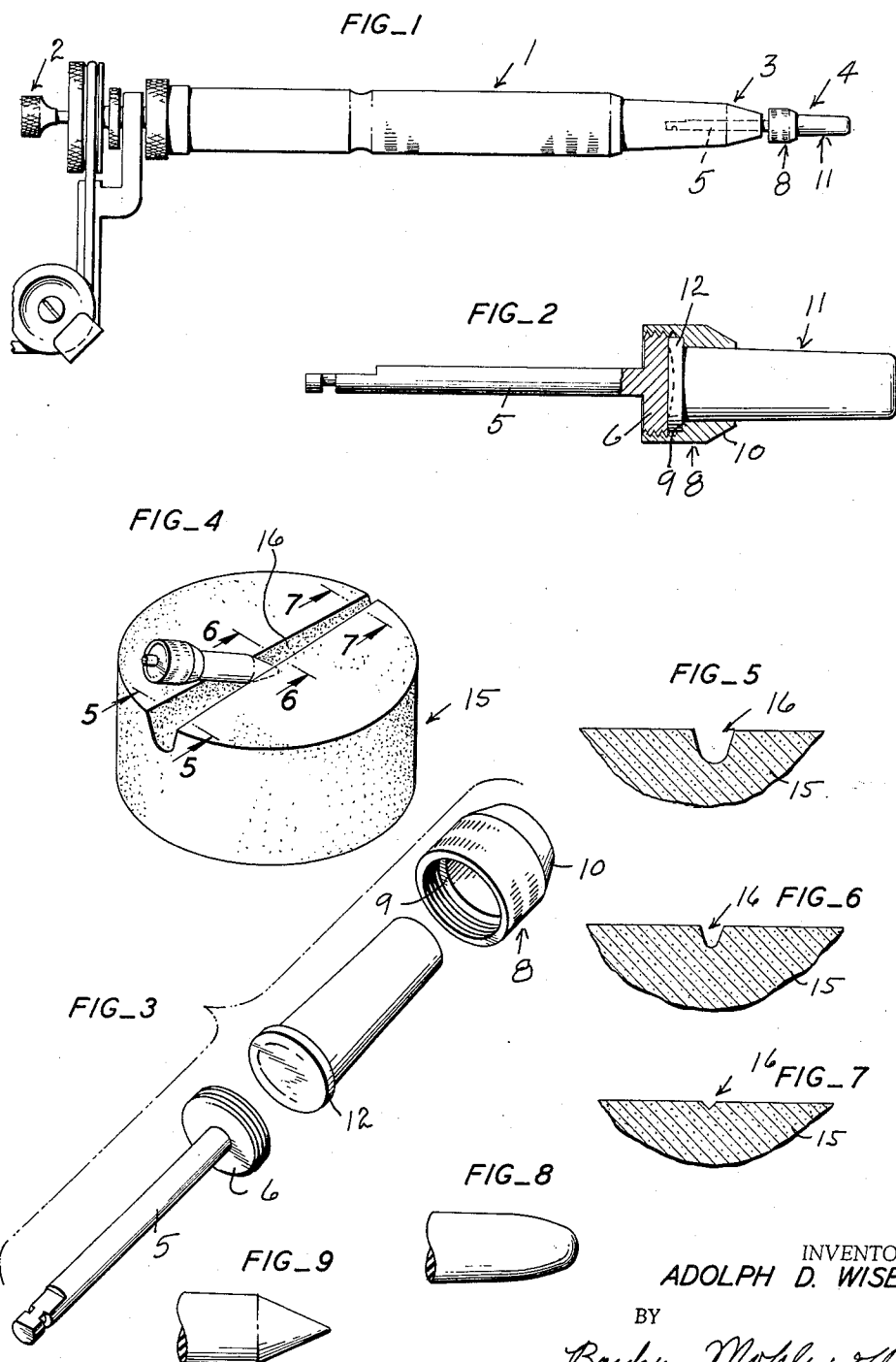
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DENTAL TOOL

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DENTAL TOOL

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3 Claims. (Cl. 32—59)

This invention relates to a dental tool and to such tool in combination with means for conditioning it for use, and has for one of its objects the provision of an economically made polishing tool that includes an abrasive readily replaceable element and means for releasably securing such element to a conventional shank adapted, in turn, to be releasably secured in the chuck of a dental handpiece.

An additional object of the invention is the provision of a dental tool adapted for releasable securement in the usual chuck of a conventional dental handpiece, and which tool includes an abrasive polishing member so constructed as to provide an improved and more accurate mounting in the dental tool itself, than heretofore.

Heretofore the common practice in abrasive, polishing dental tools has been to firmly and inseparably secure the body of abrasive or polishing material to a base at one end of a shank, which base is integral with the shank.

This body of abrasive may or may not be properly centered relative to the shank, with the result that undesirable vibration will occur where there is a slight misalignment of the body with the axis of the shank, the latter axis being the axis of rotation.

Also, heretofore, when the abrasive body is worn down to a certain degree, the entire shank is discarded along with the remainder.

Also, it has been the practice to provide different polishing points of different external contours for work in different places, although in each instance the material is intended to be balanced about the axis of rotation. This has necessitated the removal of one tool and its replacement by another similar one but with a slightly sharper point or point that is more blunt, etc., and in many instances the dentist has been compelled to accept a point that is not entirely satisfactory, but that may come closest to his requirement. When the points have become worn out of shape they must be discarded.

With the present invention, means is provided for quickly reshaping the body of abrasive to any desired shape, or to shape a plain cylindrical body to any desired point.

Other objects and advantages will appear in the description and in the drawings.

In the drawings, Fig. 1 is a side elevational view of a conventional dental handpiece having the dental tool of this invention releasably held in its chuck.

Fig. 2 is an enlarged part sectional view of the dental tool of this invention, including the body of abrasive releasably held therein.

Fig. 3 is an exploded view of the dental tool of Fig. 2.

Fig. 4 is a perspective view of the sharpening means for shaping or reshaping a point on the abrasive body of the dental tool, showing the said body in position.

Figs. 5, 6, 7 are fragmentary enlarged sectional views taken along lines 5—5, 6—6 and 7—7 of Fig. 4.

Fig. 8 is a fragmentary elevational view of one point adapted to be shaped by the sharpener of Fig. 4, and Fig. 9 is a fragmentary elevational view of another point adapted to be shaped by the same sharpener.

In detail, the dental handpiece 1 of Fig. 1 is conventional, having a chuck release and tightener 2 at one end and the conventional chuck 3 at the other end, the latter being connected in the usual way with the dental engine for effecting rotation thereof.

The dental tool of this invention is generally designated 4, and comprises a conventional shank 5 adapted to be releasably secured in the chuck 3. This shank has a circular head 6 (Fig. 3) rigidly secured to one end thereof in coaxial alignment with the shank.

The outer periphery of head 6 is threaded for threadedly connecting with the internal threads at one end of a sleeve-like collar 8 internally formed with an annular shoulder 9 that faces axially thereof toward head 6 for overlying the marginal axially outwardly facing surface of said head.

The portion of the collar 8 beyond the shoulder in direction away from the threaded end of the collar is of substantial length and has cylindrical inner walls, while the outer side of the collar at the end thereof remote from the threaded end is tapered toward the latter end as at 10.

A cylindrical, solid abrasive polishing body 11 is adapted to be held in the tool. The body 11 illustrated herein is of rubber with the polishing abrasive imbedded therein and uniformly distributed throughout the body.

One end of body 11 is formed with a radially outwardly projecting flange 12 that is adapted to be gripped between the marginal portion of the head 6 and the shoulder 9 when the collar 8 is screwed onto the head 6, and the axially outwardly facing surface of the body 11 inwardly of said flange is preferably depressed slightly as indicated in the dotted line in Fig. 2 so that there will be a positive seating of the flange against the head free from any possible irregularities in the surface of the head or central end surface of the body 11. This has been found to be desirable and to overcome any tendency for misalignment between the axis of the body 1 and the shank 5 and resultant vibration of the body 11.

The cylindrical inner surface of the collar 8 forms a support for the body 11 so that the portion of the body projecting from the collar will be quite solidly supported by the collar and against the head 6.

The threads on the head 6 and collar are, of course, so directed that the collar will be tightly held against the flange 12 during rotation of the dental tool in a direction for polishing by the body 1.

The cylindrical outer sides of the exposed portion of body 11 are adapted to be used for polishing, whether or not the outer end of the body is shaped to a blunt or sharp point. However, in order to shape the body 1 as desired, an abrasive stone 15 (Fig. 4) is provided, which stone has a groove 16 formed in one of its faces. The sides of groove 16 extend convergently from one of their ends at one side of the stone to the other side of said stone, and the bottom of the groove extends slantingly upwardly, as seen in Fig. 4, from said one side to the other side. The bottom of the groove is rounded as seen in Figs. 5 at its wide end, and 6 and approaches a V-shape at a point about midway between the ends of the groove. The remaining bottom of the groove may be substantially of V-shape, as seen in Fig. 7 and the sides of the groove may also have different degrees of convergence, downwardly toward the bottom at different points therealong.

To shape the outer end of body 11, the said body, while held in the dental tool and with the latter in the handpiece is inserted into the groove in stone 15 and is rotated, and the degree of inclination relative to the length of the groove, and the position of the body 11 in the groove, will determine the shape of the outer end of body 11.

For example, the relatively blunt point of Fig. 6 will be formed at the deeper end of the groove, with the

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body 11 held more or less perpendicular to the groove, while the sharper point of Fig. 9 will be formed with the body 11 more in the position seen in Fig. 4. Any degree of sharpness or bluntness may be procured very quickly.

It is to be understood that the detailed description and drawings are not to be considered restrictive of the invention, but merely illustrative of a preferred form thereof.

I claim:

1. A dental tool adapted to be releasably secured in the chuck of a dental handpiece for rotation of such tool comprising: a rigid elongated shank adapted to be held in such chuck, having an axially facing annular surface directed away from said shank a circular head coaxial with said shank rigidly secured to one end of said shank, a cylindrical polishing member having an annular flange rigid and coaxial therewith projecting radially of said member at one end of the latter, said flange being of substantially the same diameter as said head and means releasably connected with said head releasably securing said flange against said axially facing annular surface of said head coaxial with the latter.

2. A dental tool adapted to be releasably secured in the chuck of a dental handpiece for rotation of such tool comprising: a rigid elongated shank adapted to be held in such chuck, a circular head coaxial with said shank rigidly secured to one end of said shank, a cylindrical polishing member having an annular flange rigid and coaxial therewith projecting radially of said member at one end of the latter, said flange being of substantially the same diameter as said head and means releasably connected with said head releasably securing said flange against said head coaxial with the latter, said member including said flange being solid and of abrasive material,

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the end surface of said member within said flange being depressed whereby said annular flange will seat against said head with the depressed portion being substantially free from engagement with said head.

3. A dental tool adapted to be releasably secured in the chuck of a dental handpiece for rotation of such tool comprising: a rigid elongated shank adapted to be held in such chuck, a circular head coaxial with said shank rigidly secured to one end of said shank, a cylindrical polishing member having an annular flange rigid and coaxial therewith projecting radially of said member at one end of the latter, said flange being of substantially the same diameter as said head and means releasably connected with said head releasably securing said flange against said head coaxial with the latter, said member including said flange being solid and of abrasive material, the end surface of said body within said flange being depressed whereby said annular flange will seat against said head with the depressed portion being substantially free from engagement with said head, said means for securing said flange against said head being a sleeve-like collar threadedly connected with said head at one end thereof and through which said cylindrical member extends, and an axially facing shoulder in said collar in tight engagement with the side of said flange that faces away from said head, said sleeve-like member including cylindrical walls in relatively close engagement with the outer sides of said member spaced from said head for supporting said member coaxial with said head.

References Cited in the file of this patent

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