Oct. 27, 1953 A. D. WISEMAN 2,656,559

DENTAL BRUSH IN ELASTIC BASE FOR HANDPIECE

Filed Nov. 28, 1949

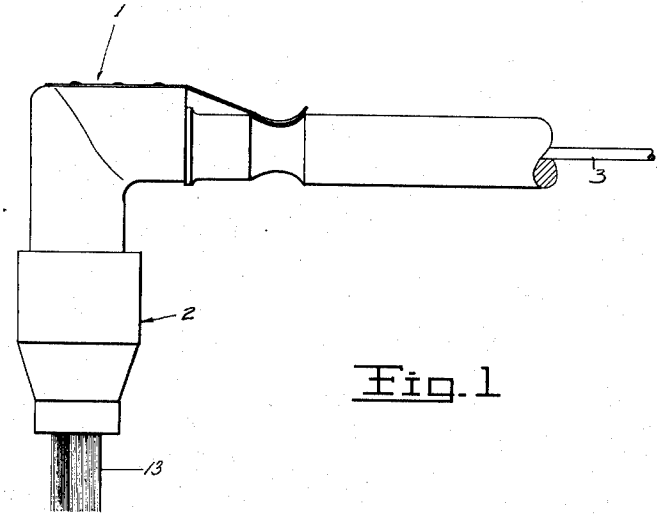


Fig. 1

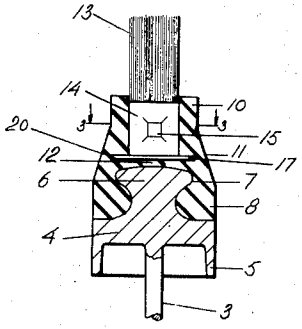


Fig. 2

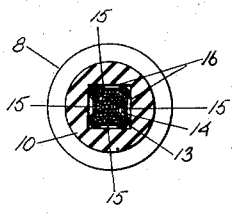


Fig. 3

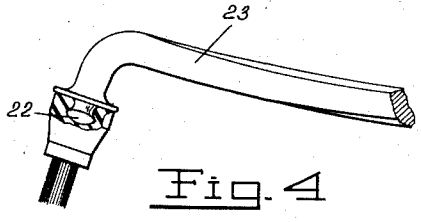


Fig. 4

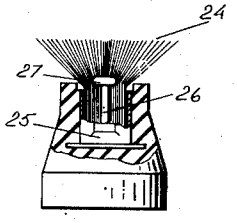


Fig. 5

INVENTOR.
ADOLPH D. WISEMAN
BY
Boyken, Mohler & Beckley
ATTORNEYS

Patented Oct. 27, 1953

2,656,559

UNITED STATES PATENT OFFICE

2,656,559

DENTAL BRUSH IN ELASTIC BASE FOR HANDPIECE

Adolph D. Wiseman, San Francisco, Calif.

Application November 28, 1949, Serial No. 129,758

1 Claim. (Cl. 15—180)

1

This invention relates to a dental brush and has for one of its objects the provision of a shock proof bristle brush for prophylactic work in brushing teeth, which brush is of the type having substantially parallel bristles secured together at one of their ends.

Heretofore brushes intended for the same purpose and manner of operation as the present invention have consisted of bristles tightly held together at one of their ends in a metal socket member that in turn has been provided with a screw for securing the same to a dental tool of some kind, or else the socket member has had a shank secured thereto for engagement by the chuck of a conventional handpiece. This structure has not infrequently resulted in shock or injury or both to the patient by inadvertent striking of the teeth with the hard socket member.

One of the objects of the present invention is the provision of a dental brush that entirely overcomes the above objection to the metal socket member or base, and that at the same time provides means for readily securing the brush to a handle or to the rotary spindle or chuck of a dental handpiece.

Other objects and advantages will be seen from the description and drawings.

In the drawings, Fig. 1 is a side elevational view showing a brush secured to a conventional handpiece for rotatably supporting the brush.

Fig. 2 is an enlarged sectional view showing the brush removably secured on a shank, that is adapted to be engaged by the chuck of a handpiece.

Fig. 3 is a sectional view taken along line 3—3 of Fig. 2.

Fig. 4 is a fragmentary side elevational view showing the brush on a rigid handle.

Fig. 5 is a part sectional side view showing a brush with bristles extending divergently instead of parallel.

In practice, the usual dental handpiece is either straight or has an angle head 1 as seen in Fig. 1. In both instances a rotary chuck 2 is provided, which is driven by the conventional dental engine or motor, and the various devices for use with the handpiece, such as burrs, polishers, brushes, etc. are provided with long or short shanks for securement in the chuck of the straight or angle head handpiece, as the case may be.

In my United States Letters Patent 2,017,881 of October 22, 1935, a shank piece of a dental tool is shown to which the preferred form of the

2

present invention is adapted to be attached. In Fig. 2 such shank piece is indicated at 3 and is provided at one end with a circular head 4 coaxial therewith, which head has an annular axially extending flange 5 projecting from its edge toward the end of the shank that is opposite said head. A bulbous projection 6 is on the outer side of head 4 and is coaxial with the shank, said projection being adapted to snap into a complementarily formed socket 7 formed in the base member 8 of the brush holder of the present invention.

The general structure above described, apart from the structure for holding the brush, is generally shown in said United States patent already mentioned, but in connection with a different type brush and with a polishing cup.

In the present invention, a skirt 10 integral with said base member projects axially from the latter in direction away from the socket 7, said skirt being coaxial with said socket, and with the base member, the latter being externally cylindrical.

Skirt 10 is preferably externally cylindrical and of smaller diameter than that of the base, the exterior surfaces of said base and skirt being joined by a tapered surface as indicated at 11. The inside of the skirt is formed to provide four substantially flat sides, and a web 12 separates the bottom of the socket or recess enclosed by the skirt 10 and the socket 7.

The bristles 13 of the brush are formed into a cylindrical elongated body in substantially parallel, side-by-side relationship, and a metal sleeve 14 surrounds one of the ends of said body. This sleeve is tightly crimped against the bristles at four equally spaced points 15 thus tending to "square" the sleeve so that its four sides will fit against the four flat inner sides 16 of the skirt when the said sleeve is inserted into the skirt.

The sleeve 14 is formed at one end with a radially outwardly projecting flange 17. This flanged end of said sleeve is substantially flush with the terminating ends of the bristles that are enclosed by the sleeve.

At the inner end of skirt 10 and at the juncture between said skirt and web 12, an inwardly opening annular, narrow recess 20 is formed that is adapted to receive the flange 17 on sleeve 14 when the latter is within the skirt, and when said sleeve is in the said skirt, as seen in Fig. 2, the outer edge of the skirt extends slightly beyond the sleeve and the end of the body of bristles at the flange end of the sleeve 14 is supported against the web 12.

The base member 8, web 12 and skirt 10 are all preferably formed of rubber or similar material suitable for employment in the mouth of a person, and the rubber or said material is relatively soft, flexible and resilient, hence the skirt is adapted to yield under force in any direction and the web 12 functions as a cushion as well as providing a friction surface adapted to engage the end of the body of bristles to help prevent rotation of said body relative to the skirt. The inner flat sided surface on the skirt also helps to prevent relative rotation between the skirt and the sleeve 14 in which the one end of the body of bristles is secured. Inasmuch as the soft skirt 10 covers the sleeve 14, it is impossible for the sleeve to strike the teeth.

In actual practice, the sleeve 14 and the body of bristles secured therein may be removed from or inserted into the skirt 10, and while this is the preferred structure at this time, it is to be understood that the invention is not necessarily restricted thereto. The bristles could be vulcanized into the rubber skirt or the sleeve 14 could be vulcanized or cemented to said skirt. In any event, the skirt should be flexible enough to permit a slight yielding of the body of bristles out of a position coaxial with the skirt, and it should be sufficiently soft to not injure the teeth.

While the socket 7 is the preferable means for securing the base 8 to a handle or to a shank or chuck, it is to be understood that the invention is not necessarily to be restricted to this structure.

In Fig. 4 the brush as shown in Fig. 2 is secured to a rigid handle for manual manipulation by the user in a manner similar to a tooth brush in order to reach normally relatively inaccessible places. The bulbous projection 22 is formed integral with the handle 23 in this instance.

In Fig. 5 is shown a brush in which the same construction as provided in Fig. 2 may be used to secure the bristles 24 in position within the sleeve 25, which is identical with sleeve 14. However,

a spreader in the form of a pin 26 having a head 27 is secured with the bristles in said sleeve with the head 27 positioned to spread the bristles to positions extending divergently from the end of the sleeve. The degree and characteristic of divergence depends mainly upon the size and shape of the head 27 and its position relative to the sleeve.

I claim:

A dental brush comprising an elongated body of lengths of substantially parallel bristles, a sleeve of rigid material surrounding said bristles at one end of said body for holding said bristles together, a base member at one end of said body projecting axially outwardly thereof formed to provide a connection with the shank piece of a dental tool, said base member having a relatively soft, flexible, resilient skirt fully enclosing said sleeve and a flange rigid with said sleeve projecting radially outwardly within said skirt for holding said sleeve to said member.

ADOLPH D. WISEMAN.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
926,303	Thompson	June 29, 1909
1,649,052	Zimmet	Nov. 15, 1927
1,693,329	Astley	Nov. 27, 1928
1,694,636	Barker	Dec. 11, 1928
1,720,017	Touchstone	July 9, 1929
1,874,467	Doll	Aug. 30, 1932
1,918,521	Chott	July 18, 1933
2,017,881	Wiseman	Oct. 22, 1935
2,093,007	Chott	Sept. 14, 1937
2,300,828	Goldenberg	Nov. 3, 1942

FOREIGN PATENTS

Number	Country	Date
717,914	France	Jan. 16, 1932
792,851	France	Jan. 11, 1936
805,194	France	Nov. 13, 1936