Sept. 14, 1937. E. L. CHOTT 2,093,007

MECHANICAL TOOTH BRUSH

Filed Sept. 3, 1935

Fig. 1.

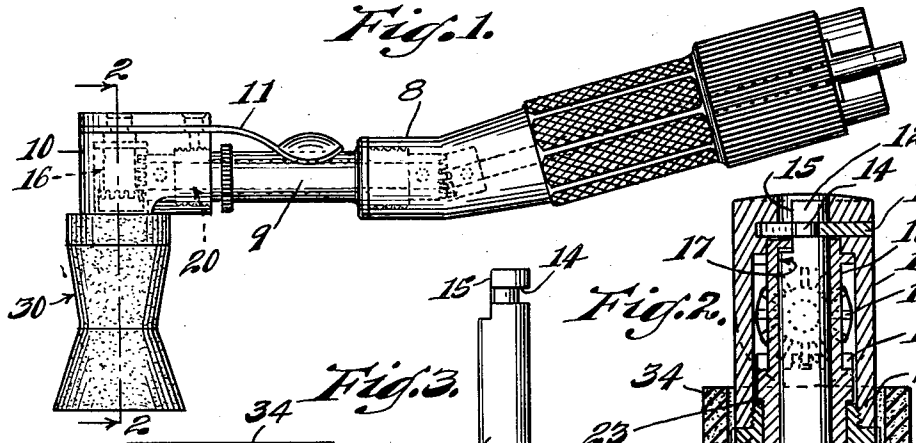


Fig. 2.

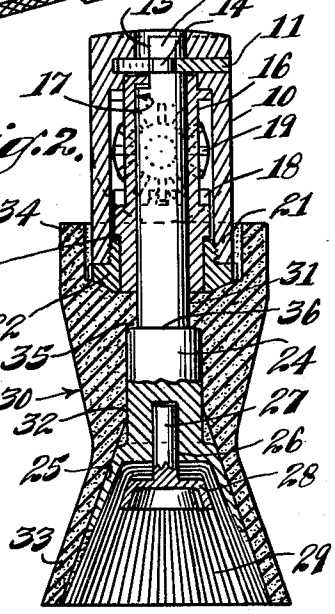


Fig. 3.

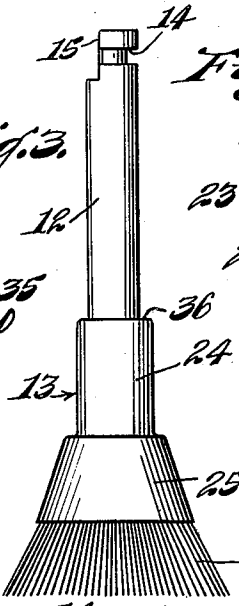


Fig. 4.

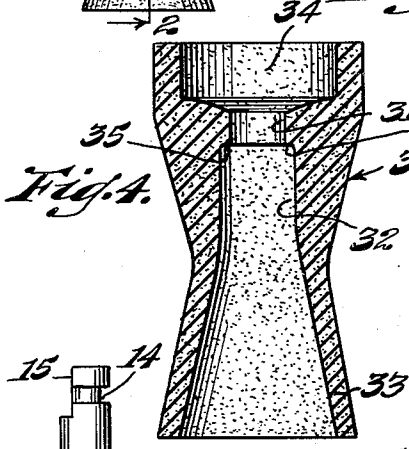


Fig. 6.

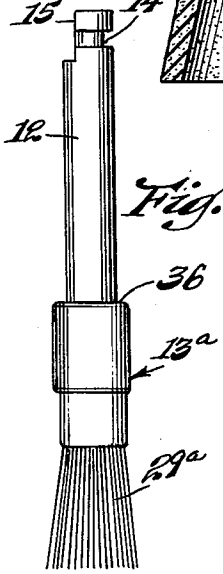


Fig. 5.

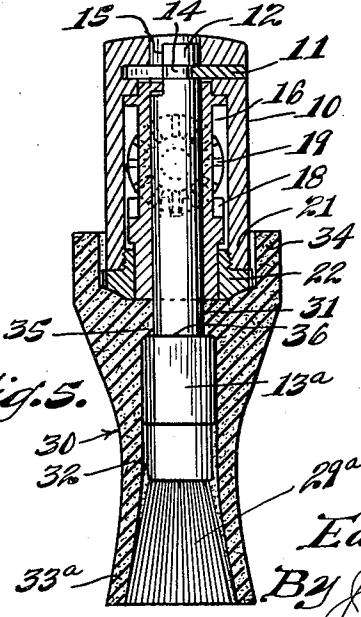
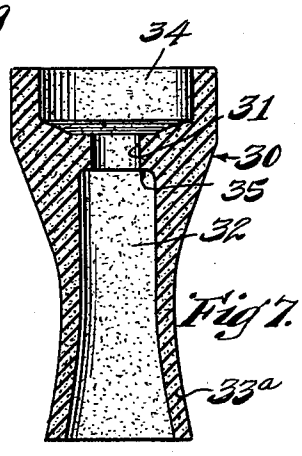


Fig. 7.



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UNITED STATES PATENT OFFICE

2,093,007

MECHANICAL TOOTH BRUSH

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Application September 3, 1935, Serial No. 38,872

4 Claims. (Cl. 15—246)

My invention relates to mechanical tooth brushes and more particularly to a guard and dentifrice holder for such a brush.

An object of my invention is to provide a guard for the handpiece of a dentist's mechanical brush and drill mechanism.

Another object is to provide a guard for a rotary tooth brush which will prevent injury to the gums.

A further object is to provide in connection with a tooth brush guard a cup for retaining dentifrice in the brush during use.

Another object is to provide a device of the character specified which is simple, practical, and inexpensive to manufacture.

Another object is to provide a device as described which is more efficient and will have a longer life than heretofore.

Further objects and advantages will appear and be brought out more fully in the following specification, reference being had to the accompanying drawing, in which:

Fig. 1 is a side view of a handpiece of a dentist's instrument showing the device of my invention therewith;

Fig. 2 is a sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is a view of the brush and brush holder of Fig. 2;

Fig. 4 is a sectional view of the guard and dentifrice holder shown in Fig. 2;

Fig. 5 is a view similar to Fig. 2, showing a modified form of brush and guard;

Fig. 6 is a separate view of the brush shown in Fig. 5; and

Fig. 7 is a sectional view of the guard shown in Fig. 5.

Referring more particularly to the drawing, I show a handpiece 8 of the dentist's mechanical drill instrument having an extension sleeve 9, to which is secured a housing 10 having a lock arm 11 and adapted to receive a shank 12 of a rotary brush 13 at right angles to the general axis of the handpiece and extension shaft, as is well known in the art. The shank 12 has a groove 14 adapted for engagement with the lock arm 11 to retain the shank in the housing 10 and a flattened cut-out portion 15 for engagement with a sleeve 16 having a bore 17 through which the shank 12 is passed. The sleeve 16 is provided with gear ring 18 which engages with a gear ring 19 secured to a shaft section 20 in the handpiece 8. Housing 10 is provided with a downwardly projecting neck 21, and a locking collar 22 is secured thereto, which collar is adapted to maintain driving sleeve 16 in housing 10 by engagement with a shoulder 23 on sleeve 16. Brush 13 is shown as having a shank head 24 which is integral with a shank apron 25 having a flare or bell-shaped configuration provided with an internal recess 26 in which is received a pin portion 27 of a cap pin 28 which is frusto-conical in shape and adapted to form a securing cap for a tuft of bristles 29 which comprise the brush.

I show in Fig. 4 in section one form of the principal embodiment of my invention, which comprises a guard 30 which is preferably of soft rubber or an equivalent material, having a generally elongated, cylindrical shape and provided with a central bore 31, substantially the diameter of shank 12 of the brush 13. The bore 31 is continued downwardly and has an enlarged portion 32, which portion is continuous downwardly and outwardly at 33, such that a substantially close fit may be provided for the shank head 24, the shank apron 25, and the bristles 29, as shown in Fig. 2. The bore 31 is also continuous upwardly and has a further enlargement 34 which is adapted to receive the neck 21 and the locking collar 22 of the housing 10 and provides a substantially close fit with the same. An abutment 35 is shown on the guard 30 adjacent the bore 31 and provides a shoulder which is engageable with a shoulder 36 on shank head 24 whereby the guard 30 is prevented from becoming dislodged from its position on the shank 12. The soft rubber comprising the guard 30 will make a friction contact with the brush 13 and will be rotated with it when the same is in operation.

In Figs. 5, 6, and 7 I show a somewhat modified form of guard for use in connection with a substantially straight brush 13a having a bristle portion 29a wherein the bristles are substantially parallel. In this case the enlarged portion 32 of the bore 31 is shown as having a very slight outward tapered portion 33a so that this tapered portion will form a close fit with the bristle portion 29a.

In operation a quantity of dentifrice can be lodged in bristles 29 and 29a and applied against a tooth to be cleaned, and when the brush 13 or 13a is rotated, carrying with it the guard 30, the dentifrice will be maintained within the bristle portion of the brush, and a certain massaging effect can be achieved by the lower portions 33 and 33a of the member 30 by virtue of the flexibility of the rubber of which it is made. It is therefore apparent that a more efficient brushing operation will result, that a larger portion of

the dentifrice will be maintained in the bristles and that the usual loss of dentifrice will be reduced to a minimum. It will be further apparent that the enlarged portion **34** of the bore provides a guard about the neck of the housing **10** and will prevent injury to the teeth or gums in case the instrument is accidentally brought in contact therewith. Furthermore, it should be apparent that the guard is removable from the shank which provides for greater facility in keeping the parts clean and permits the guard to be used on a number of brushes so that it may have a longer life than a number of brushes with which it may have been used, thus increasing its value and reducing the cost of providing brushes with a guard which may not be detachable therefrom.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A device of the character described comprising a removable guard for a rotary brush having a cylindrical bore therethrough, said bore having an enlarged portion adapted to receive a brush holder and brush and a further enlarged portion adapted to form a guard for the neck of an instrument, said first mentioned enlarged portion adapted to form a shoulder whereby to provide securing means for the guard.

2. A device of the character described comprising a removable guard for a rotary brush having a cylindrical bore therethrough, said bore having an enlarged portion adapted to receive a brush holder and brush and a further enlarged portion adapted to form a guard for the neck of an instrument, said bore having a locking shoulder.

3. A device of the character described comprising a removable guard for a rotary brush having a cylindrical bore therethrough, said bore having an enlarged portion adapted to substantially inclose the side portions of a brush holder and brush and a further enlarged portion adapted to form a guard for the neck of an instrument, said bore having a locking shoulder, whereby to retain said guard on said brush.

4. A device of the character described comprising a removable guard for a rotary brush having a cylindrical bore therefor, said bore having an enlarged conical portion adapted to receive a conical brush and holder therefor and to retain dentifrice in said brush, said bore having a locking shoulder.

EDWARD L. CHOTT.