

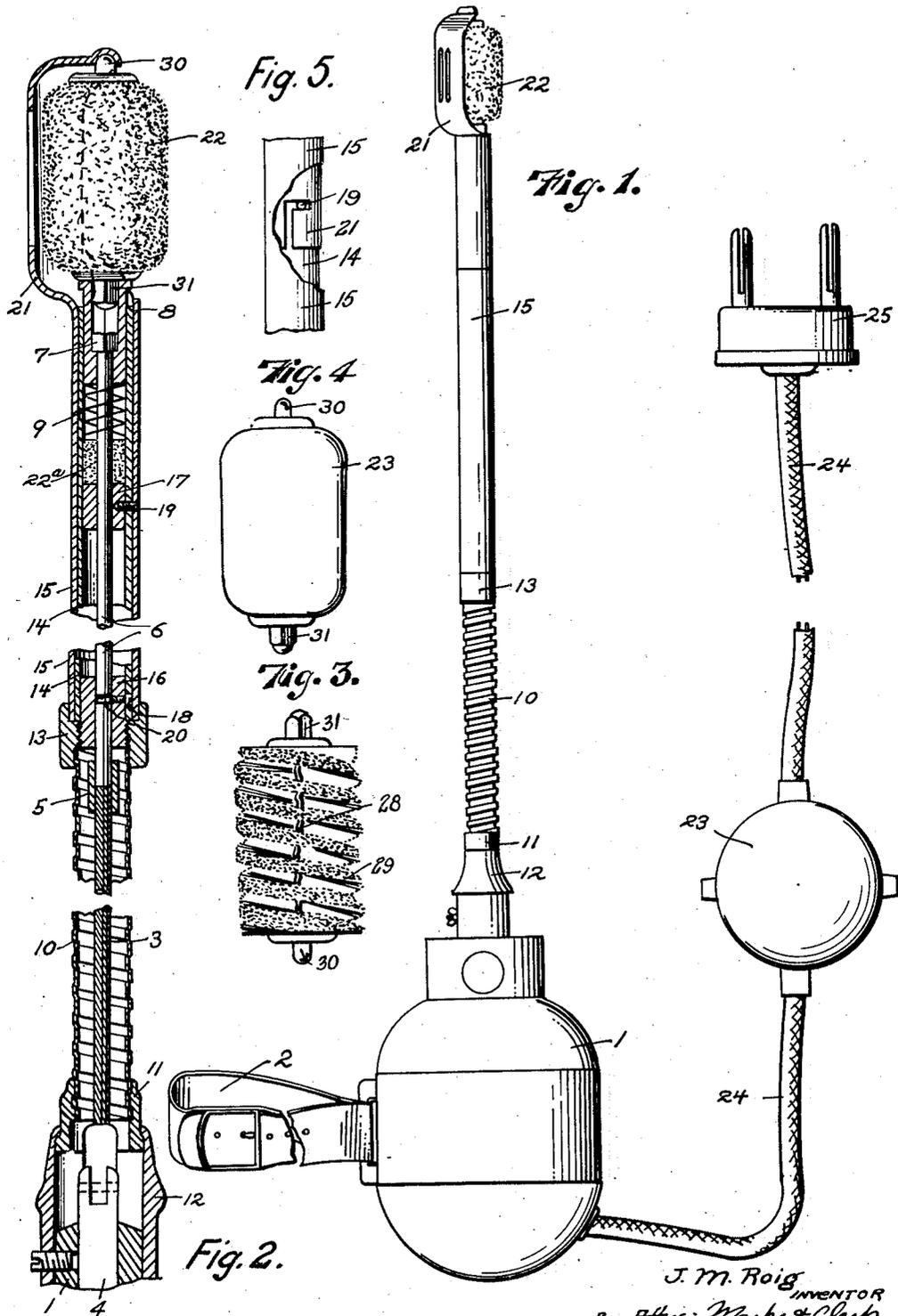
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REVOLVING TOOTHBRUSH AND NAIL POLISHER

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REVOLVING TOOTHBRUSH AND NAIL POLISHER

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This invention has for its object to provide a revolving tool or implement holder to which a tooth-brush, nail polisher or other implement for personal use may be fitted and operated by a small electric motor, the complete apparatus fitted with all accessories being compact and convenient in manipulation and control.

In the accompanying drawings wherein an approved embodiment of the invention is illustrated

Fig. 1 is a side elevation of the complete apparatus;

Fig. 2 is an enlarged longitudinal section through a part of the apparatus, parts being broken away;

Fig. 3 is a detail view on an enlarged scale of one of the preferred forms of tooth-brush to be used in connection with the apparatus;

Fig. 4 is a similar view of a nail polisher which may replace the tooth-brush illustrated in Fig. 3 for use in the apparatus.

Fig. 5 is a detail view showing a connection between certain parts of the device.

Referring to the drawings in detail, the electric motor 1 is provided with a bracelet or wrist strap 2 by which the motor 1 may be conveniently held upon the wrist of the user leaving the fingers of the hand free to manipulate the device. The axle or shaft 4 of the motor 1 is connected with a flexible shaft 3 and said shaft 3 is connected through a coupling sleeve 5 to a rigid shaft 6 removed from the motor 1 and provided with a head 7 of polygonal form which is received in a corresponding cavity in the tool holder 8, the latter being normally pressed outwardly to fully seat the head 7 in the polygonal portion of the cavity or bore in the holder 8 by the tension of a spring 9.

The flexible shaft 3 is inclosed in a flexible housing or tube 10 connected by means of a terminal connection 11 to the hub part 12 of the motor 1 and connected at its opposite end by means of a coupling sleeve 13 with a rigid sleeve or tube 14. The tube 14 is inclosed by a tube 15 constituting the handle of the implement in connection with which the apparatus is employed.

The rigid shaft 6 receiving its motion from

the flexible shaft 3 is journaled in bearings 16 and 17 received within the tube 14 and held in position by screws 18 and 19 respectively. The screw 18 projects through the bearing 16 and is terminally received in a groove 20 formed in the shaft 6 for limiting the axial movement of the latter, while the other screw 19 projects slightly beyond the exterior of the tube 14 and coacts with a bayonet slot provided in the implement support 21 to removably secure the latter in position on the terminal of the handle.

A felt gasket 22a is slipped over the shaft 6 and maintained in position in the tube 14 by the spring 9, and being saturated with lubricant insures proper lubrication of the shaft 6, and at the same time prevents the admission of water or other foreign substances to the shaft.

The support 21 is approximately spoon-shaped and constitutes a protective cover or guard for the tool or implement in connection with which the arrangement is used. As shown in Figs. 1 and 2, the apparatus is used in connection with a tooth-brush 22, and as shown in these two figures a portion of the guard 21 partially incloses the tooth-brush. However, as will be understood, other types of implements may be substituted for the brush 22, as for instance, a nail polisher implement, such as illustrated in Fig. 4 and designated at 23. Each tool or implement is provided at its ends with bearing lugs 30 and 31, the lug 30 being cylindrical and fitting within a correspondingly shaped cavity provided in the terminal of the support 21, while the other lug 31 is of polygonal form, conforming to the shape of the cavity in the tool holder 8, whereby rotary movement of the latter is imparted to the tool or implement 22.

It will be understood that the brush 22 may be of any preferred form and construction, one of the most appropriate being illustrated in Fig. 3, of which the brush is constituted by two or more twisted wires 28 supporting the bristles 29, the bearing lugs 30 and 31 being provided at the terminals of the brush for engagement with the support 21 and holder 8, respectively.

The motor is preferably of a small compact type of such dimensions as to be conveniently held in the hand or supported upon the wrist of the operator by means of the wrist strap 2, and also being of the reversible type and operable by the current ordinarily available for housed lighting purposes.

The manipulation of the apparatus is very simple, the motor 1 being supported upon the wrist of the operator by the strap 2, and with the hand on the same arm the handle 15 is grasped for directing and applying the implement 22, or other desired form of implement, in the manner desired, the other hand being entirely free to manipulate the switch or other control.

The revolving brush mechanically operated cleans the teeth in a much more effective manner than is possible with hand brushes, and among the other advantages of the invention the brush may be revolved in either direction according to the direction of operation of the motor 1 enabling the top row of teeth to be cleaned from top to bottom, and the lower teeth to be cleaned from bottom to top by applying the brush horizontally to one row of teeth and then to the other, removing the reversing switch as the brush passes from one row to the other. In this manner the teeth are effectively cleaned front and back as well as between them. The spoon-shaped support 21 protects the cheeks and interior of the mouth from the brush during use, and also prevents the unnecessary loss of the dentifrice.

As stated, the apparatus may be used with equal facility for operating a nail polisher of the type illustrated in Fig. 4, the implement in this case being covered by felt or other suitable material, and in each case the implement may be conveniently removed from the apparatus after use for cleaning.

Claim:

In an apparatus of the character described, a rigid tubular member, a rigid shaft rotatably mounted in the tubular member, an implement support carried by the tubular member and having a longitudinal central cavity constituting a bearing, an implement driving member mounted in the tubular member and having a cavity therein, said driving member being mounted for axial and rotary movement in the tubular member and having driving connection with the rigid shaft, means normally tending to move the driving member outwardly into implement engaging position, the cavity in the driving member being of polygonal form and adapted to engage a correspondingly shaped lug on one end of an implement to impart rotary movement to the latter, the opposite end of the implement being engaged in the cavity of the support.

In testimony whereof I affix my signature.