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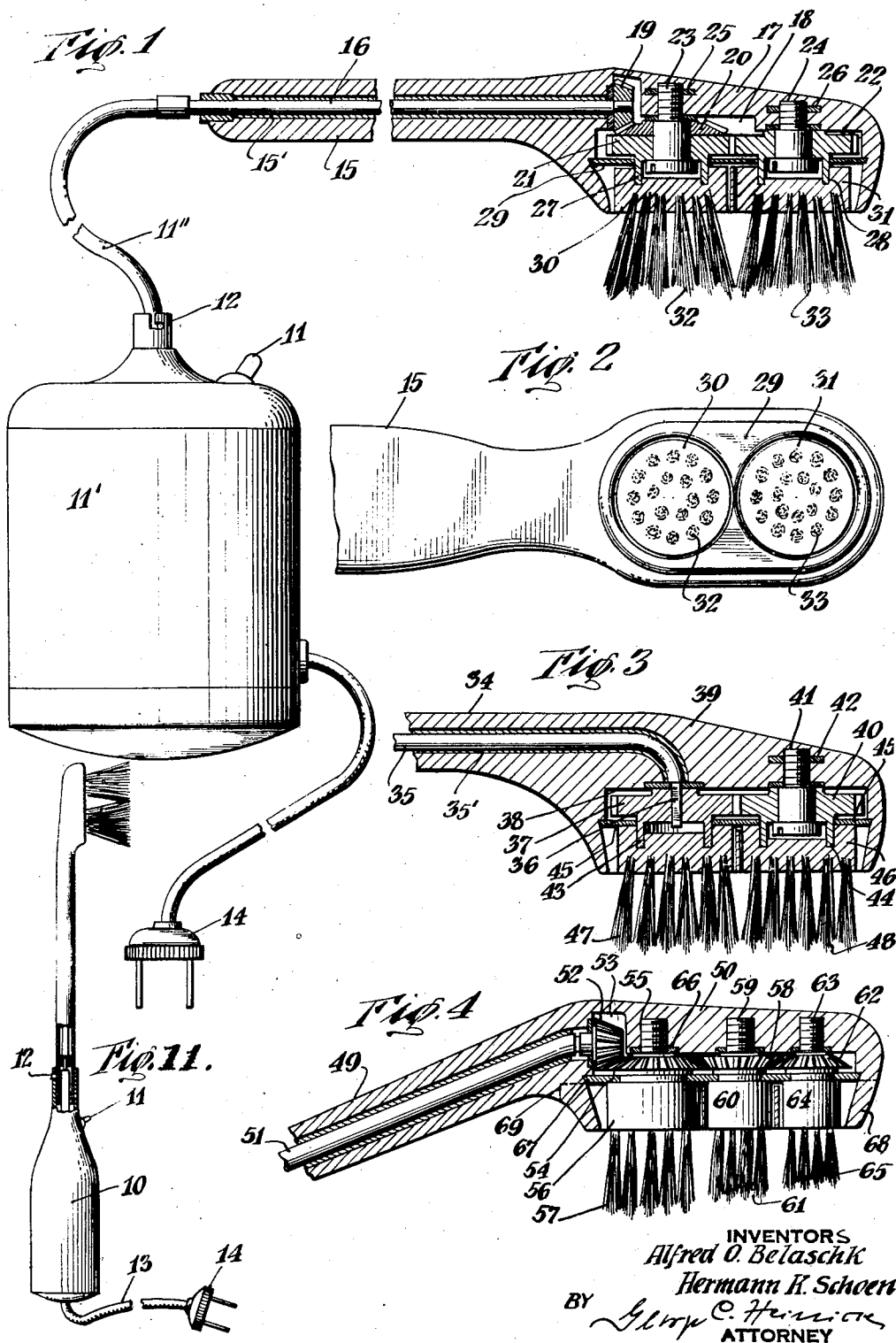
A. O. BELASCHK ET AL

2,140,307

ELECTRICALLY OPERATED COMBINATION SET FOR THE DRESSING TABLE

Filed July 10, 1934

2 Sheets-Sheet 1



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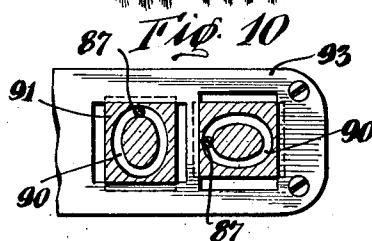
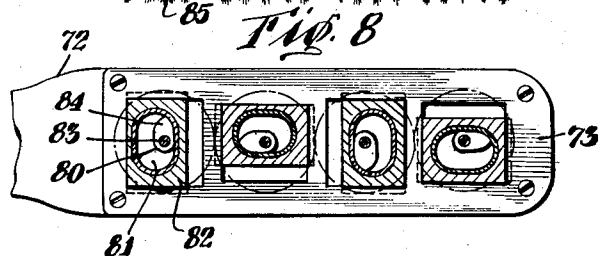
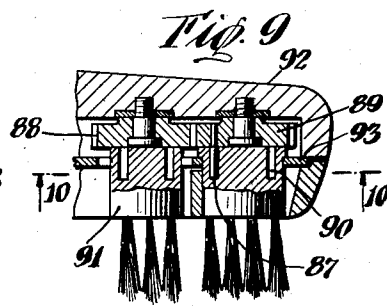
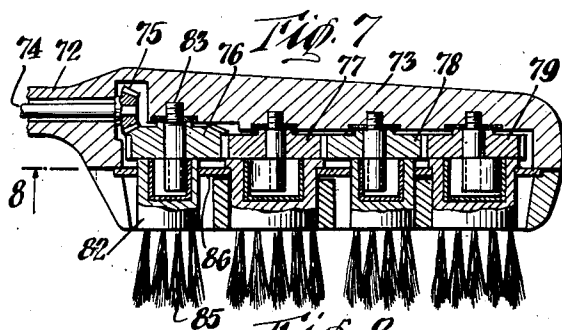
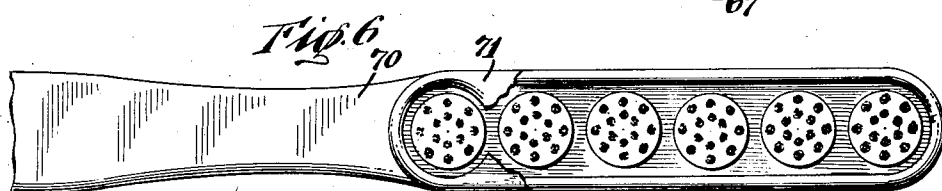
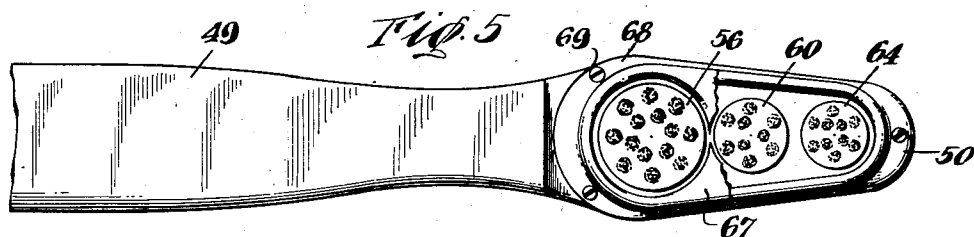
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ELECTRICALLY OPERATED COMBINATION SET FOR THE DRESSING TABLE

Filed July 10, 1934

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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ELECTRICALLY OPERATED COMBINATION
SET FOR THE DRESSING TABLEAlfred O. Belasch and Hermann K. Schoen,
Corona, N. Y.

Application July 10, 1934, Serial No. 734,520

3 Claims. (Cl. 15—28)

This invention relates to an electrically operated combination set for the dressing table, and it is the primary object of our invention to provide a set practicable for numerous uses, such as for instance a rotary toothbrush, massage implement, manicure set, shaving brush or the like.

Another object of our invention is the provision of a power driven rotary toothbrush comprising a desired and suitable number of rotary brush units either operated directly from a motor concealed in the handle or from a stationary motor driving a flexible shaft concealed in the handle of the brush, the brushes rotating in opposite directions, or are operated by means imparting to said brush units a vibratory motion, the brush units either being of uniform or varying sizes.

Still another object of our invention is the provision of a dressing table set including a rotary toothbrush having all metal parts concealed by means of a plate of non-conducting material in such manner as not to come into contact with any part of the mouth, yet giving the teeth a thorough cleaning, the upper and lower sets of teeth on their inner as well as their outer side.

A further object of our invention is the provision of a dressing table set including a universal casing adapted to be readily attached to a motor containing handle and adapted for the attachment of numerous implements used for massage of face and body, as for instance vibratory rubber tips, rubber wings or leaves, or for the attachment of a manicure set, as buffers, nail file and polisher.

A still further object of our invention is the provision of a dressing table set including a universal casing or head adapted to be readily attached to a motor containing handle and having attached thereto a shaving brush readily exchangeable for a massage head or the like.

These and other objects and advantages of our invention will become more fully known as the description thereof proceeds and will then be more specifically defined in the appended claims.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a sectional side elevation of an electrically operated rotary tooth brush with two brush units and its connection with the stationary motor.

Fig. 2 is a fragmentary bottom plan view of the brush head, Figure 1.

Fig. 3 is a fragmentary sectional side elevation of the brush head with a modification of the brush drive.

Fig. 4 is a fragmentary sectional side elevation

of a further modified form of brush head with three brush units varying in size.

Fig. 5 is a fragmentary bottom plan view of the brush head, Figure 4.

Fig. 6 is a view, similar to Figure 5 of a modified form displaying six brush units.

Fig. 7 is a fragmentary sectional side elevation of a vibratory tooth brush having four brush units.

Fig. 8 is a section on line 8—8 of Figure 7.

Fig. 9 is a fragmentary sectional side elevation of a modified form of vibratory brush.

Fig. 10 is a section on line 10—10 of Figure 9.

Fig. 11 illustrates a modified form of our toothbrush with the motor mounted in the handle thereof.

As illustrated, the handle 15, adapted to be connected with an electric motor 11' by a flexible shaft 11'', will be used for the attachment of all articles included in this invention, and the motor is provided with a switch 11 and a connecting member 12 to be engaged by a connecting member on all articles cooperating therewith. Or, as shown in Figure 11 the motor is directly embedded in the handle 10 and is also provided with a switch 11 and a connecting member 12.

The motor is connected to a suitable source of electricity by means of the cable 13 and plug 14.

The brush illustrated in Figure 1 has its handle or stem 15 preferably made of Celluloid and other non-metallic material provided with an axially extending bore in which a flexible shaft 16 is arranged connected to the motor shaft. Or, as indicated at 15' in Figure 1, the casting for the flexible shaft can be directly united with the stem by casting.

In the brush head 17 a chamber 18 is arranged in which the inner end of shaft 16 carries a bevel gear 19 in mesh with a bevel gear 20, the body of which is shaped as a gear 21 in engagement with a gear 22 rotating in opposite direction.

The gears are mounted on the screw spindles 23 and 24 respectively which are screwed into the metal sockets or ring washers 25, 26 within the material of the brush head 17 and the gears 21, 22 having depending flanges 27, 28 extending through suitable opening in a Celluloid plate 29, and these flanges engage in recesses of the heads 30, 31 of the brushes 32, 33.

In the modified form of our invention illustrated in Figure 3, the brush handle 34 has an axial bore in which the flexible shaft 35 is located, the inner end of which is suitably and angularly bent and formed with an end spindle

36, square in cross-section and carrying the gear 37 within chamber 38 in brush head 39. The gear 37 meshes with gear 40 in chamber 38 on a screw spindle 41 screwed into metal socket 42 in head 39.

The gears 37, 40 have also depending flanges 43, 44 passing through a Celluloid plate into the heads 45, 46 of the brushes 47, 48.

In the form of our invention illustrated in Figures 4 and 5, the brush stem 49 is somewhat inclined to the brush head 50 and also has a center bore through which the flexible shaft 51 extends carrying at its inner end a bevel gear 52 in a chamber 53 formed in the brush head 50 and in mesh with a bevel gear 54 on screw stem 55 and formed with the head 56 of brush 57.

Or, the casing for the flexible shaft can be cast into the stem as indicated at 35', the same as described with respect to Figure 1.

The gear 54 meshes with a bevel gear 58 on stem 59 screwed into the head 60 of brush 61 while gear 58 meshes with gear 62 on screw stem 63 of the head 64 of brush 65.

The stems 55, 59 and 63 are screwed into flanges 25 and plates 66 and the connecting flanges of the gears pass through a Celluloid plate 67. As illustrated, the brush heads 56, 60 and 64 are reduced in size towards the outer end of the brush, and the lower part 68 of the brush head 50 is removable as indicated at 69 and can be screwed to the head by means of screws (Fig. 5).

In Figure 6 a bottom plan view of a brush 70 is illustrated showing a plurality of brush heads 71, of a construction shown in Figure 1.

In Figures 7 and 8, we have illustrated a vibratory tooth brush, the stem 72 of the brush head 73 has an axial bore guiding flexible shaft 74 carrying at its inner end a bevel gear 75, and meshing with a gear 76 in brush head 73 which in turn meshes with the second gear 77 in mesh with a third gear 78 in engagement with a gear 79.

Cast in one piece with the gear 76 is an eccentrically arranged oval metal piece 80 for attachment with a brush head and having a centrally located opening 81 in the brush head 82 into which extends the lower end of the gear spindle 83, equipped with a cam 84 engaging the inner wall of the opening 81.

The turning of the cam during the rotation of the gear in the eccentrically located metal piece will impart to the brush heads and brushes 85, an up and down movement and will vibrate the brushes.

The brush units of the gears 77, 78 and 79 are similarly constructed with the exception that the heads of the second and fourth brushes are alternately arranged at an angle of 90° to the adjoining ones. A Celluloid plate 86 separates the brush head from the brushes.

In Figures 9 and 10, we have shown a modified

form of the vibrating tooth brush illustrated in Figures 7 and 8, in which a metal pin 87 eccentrically cast with each of the gears 88, 89 (Fig. 9) depends into a small oval groove 90 of the brush heads 91 arranged in the brush head 92 and separated therefrom by means of the Celluloid plate 93.

The operation of our device will be entirely clear from the above description by simultaneously having reference to the accompanying drawings, and it will be clear that by means of the connecting member 12 the various implements may be connected to or disconnected from the motor so as to operate either the various forms of motor driven tooth brushes, or the manicure and massage implements to be used in the customary manner.

It will be understood that we have described and shown the preferred forms of our invention only as a few examples of the many possible ways to practically construct the same, and that we may make such changes in the general arrangement of our invention and in the construction of the minor details thereof, as come within the scope of the appended claims without departure from the spirit of our invention and the principles involved.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is:

1. In a motor operated tooth brush, a handle, a chambered brush head integral with said handle, spindles mounted in said brush head, said spindles being in parallel relation and spaced from one another, a gear on each spindle, the gear on one of said spindles meshing with the gear on the other of said spindles, means to drive said gears, a depending flange on each of said spindle gears, and a recessed brush back mounted on each of said gears by frictional engagement of the flange of its gear in the recess of said brush back, and a flange formed with the outer end of each spindle within the flange of its gear and spaced from the brush back.

2. In an electrically operated combination set for the dressing table, a handle, a head on said handle, a pair of intermeshing gears in said head, and means to rotate the same, depending flanges on said gears, and tools having backs provided with recesses to be frictionally engaged by said flanges to hold them to said gears.

3. In a combination set for the dressing table, a hollow head, a train of rotary intermeshing gears in said head, and a means to rotate the same, recessed brush backs attached to said gears, and a means depending from said gears frictionally engaging in the recesses of said brush backs to secure the same to said gears.

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