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(54) **TOOTH PASTE DISPENSING TOOTHBRUSH**

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(57) **ABSTRACT**

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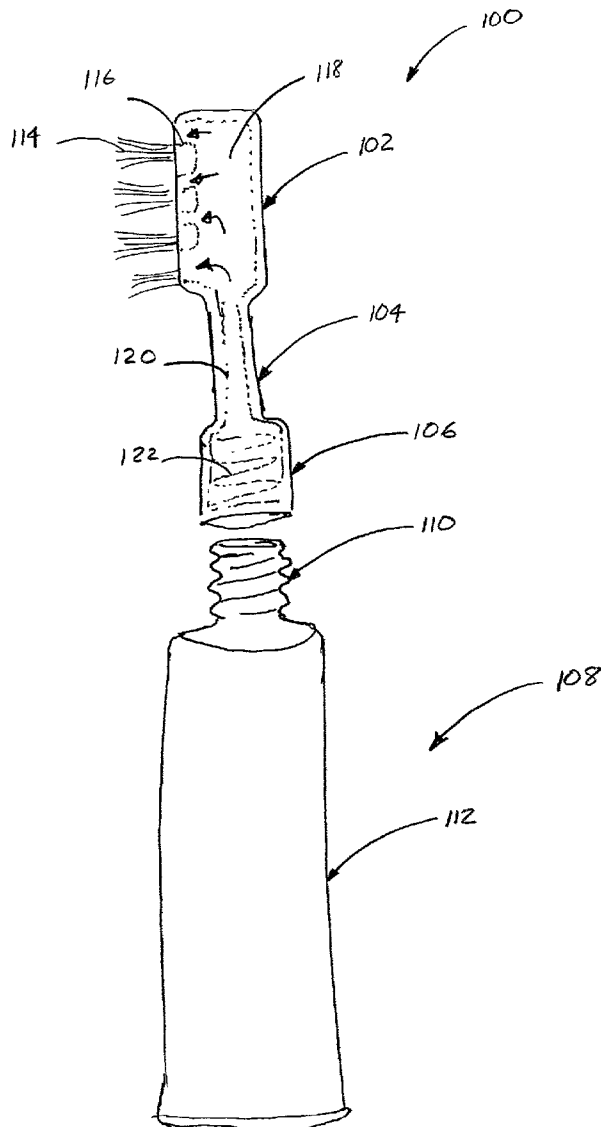
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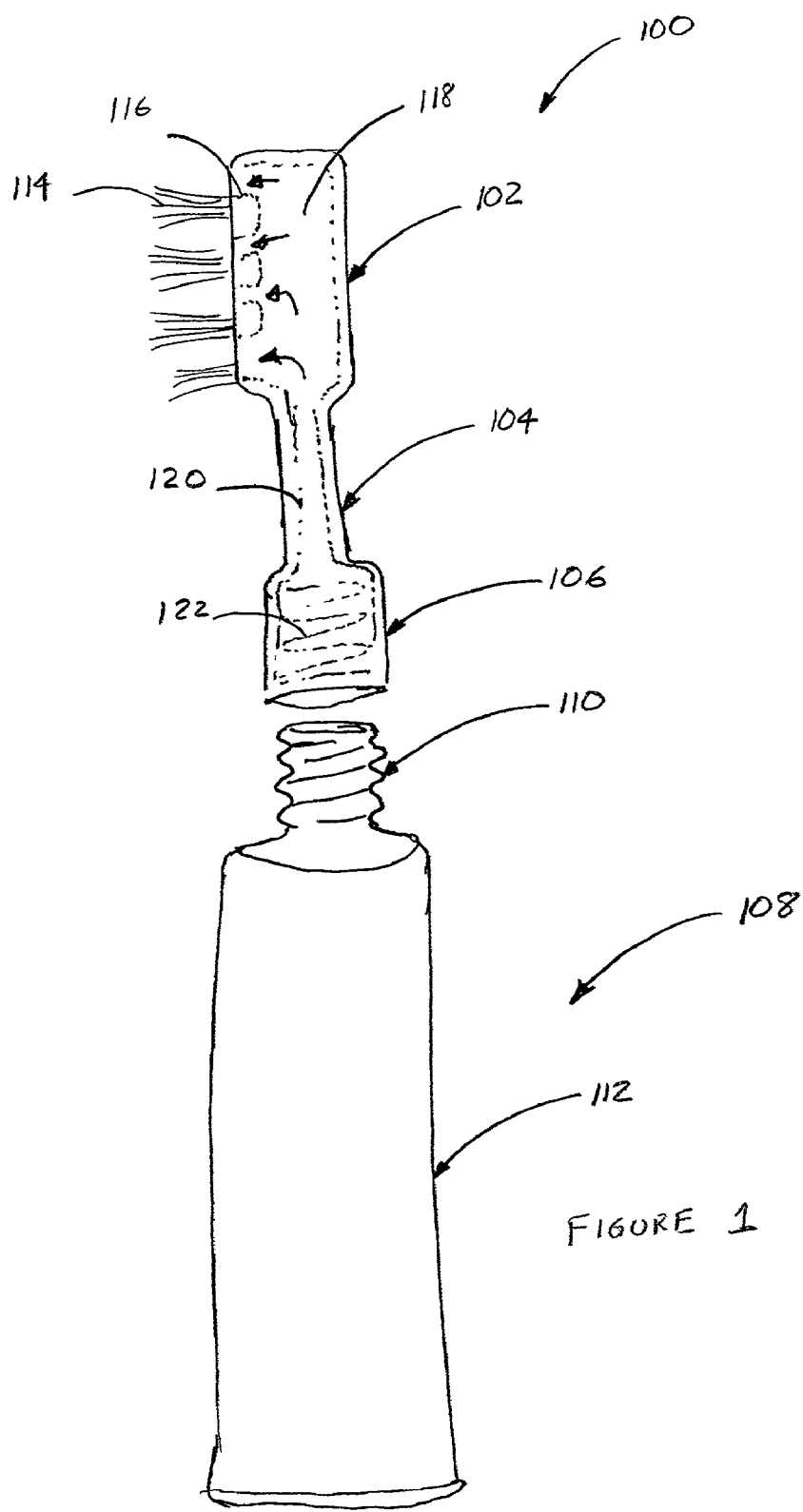
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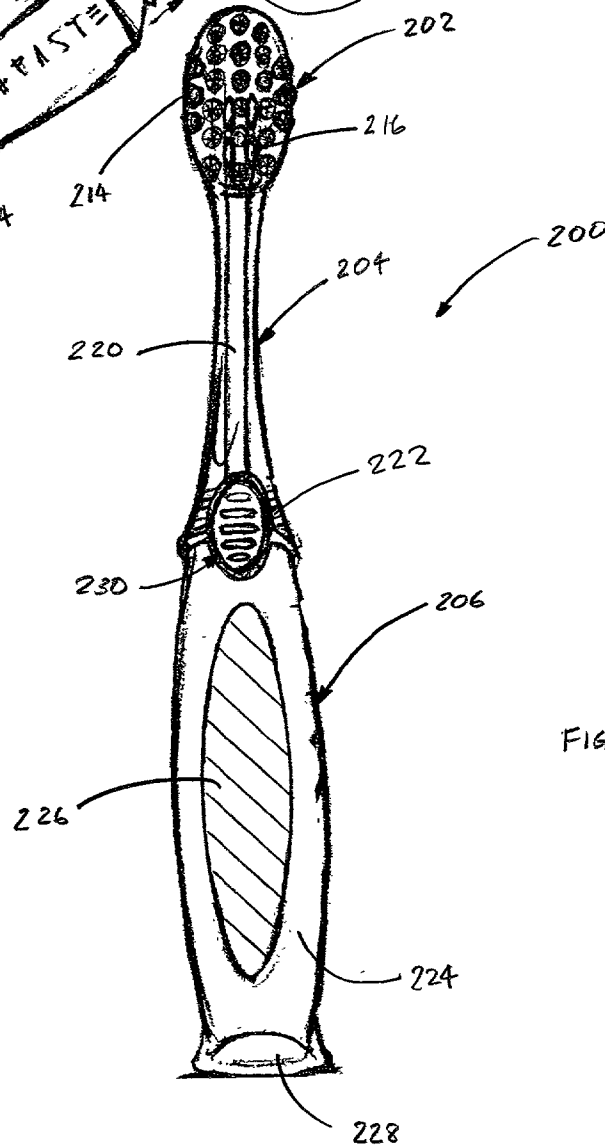
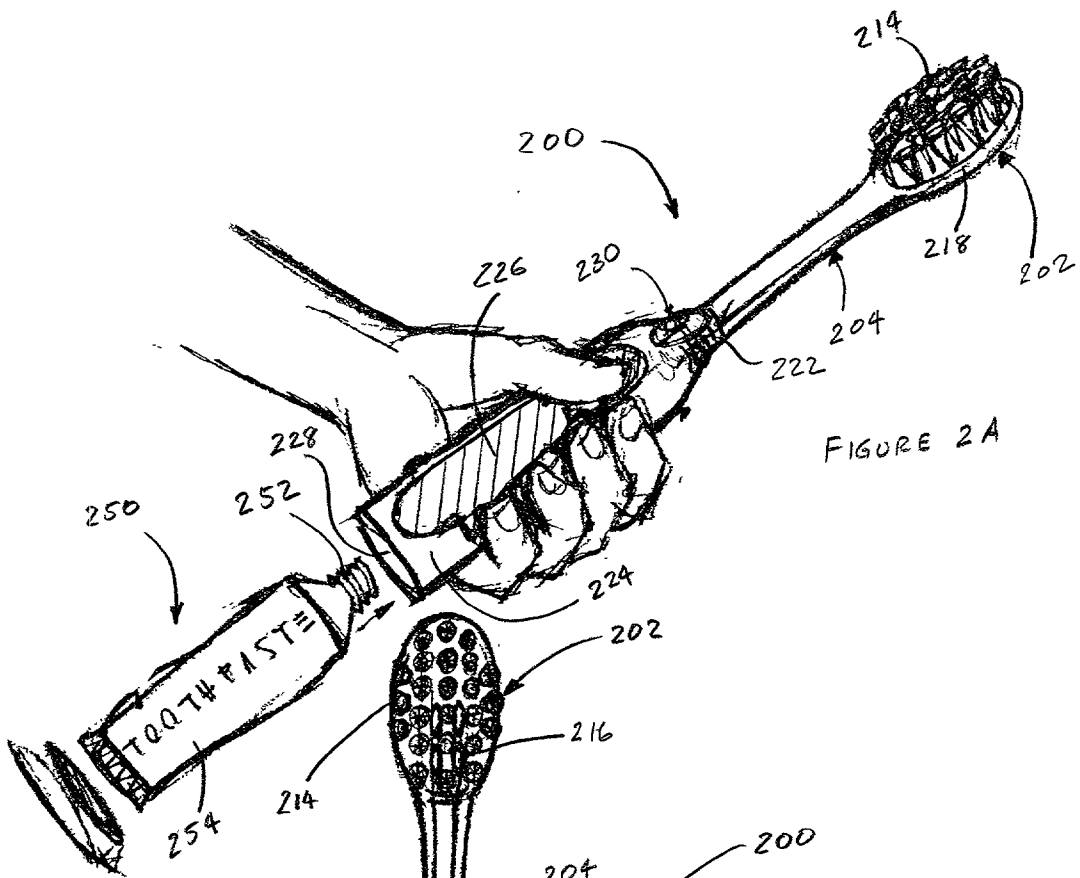
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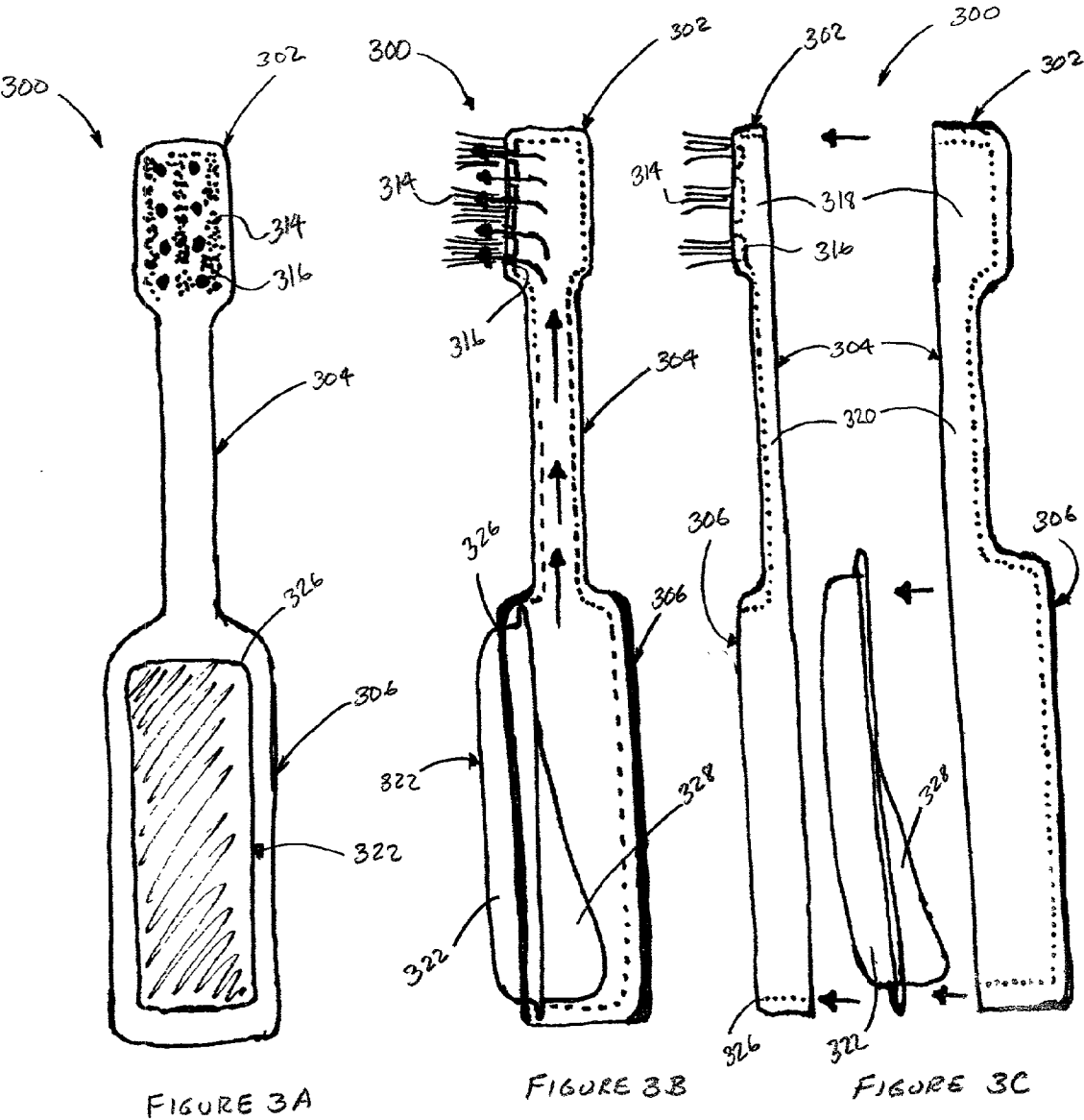
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A toothbrush including a head portion having a plurality of bristles, an internal chamber, and one or more openings to couple therethrough tooth paste from within the internal chamber to proximate the bristles. The toothbrush further includes a neck portion having an internal conduit fluidly coupled to the internal chamber of the head portion. The toothbrush additionally includes a connector portion to mate with a corresponding connector of a separate tooth paste dispenser. Another embodiment includes a housing portion for enclosing at least a portion of the separate tooth paste dispenser. Yet another embodiment includes an integral container portion for storing tooth paste with a pushing pad for dispensing of tooth paste.









TOOTH PASTE DISPENSING TOOTHBRUSH

FIELD OF THE INVENTION

[0001] This invention relates generally to toothbrushes, and in particular, to tooth paste dispensing toothbrushes.

BACKGROUND OF THE INVENTION

[0002] The act of brushing one's teeth typically requires the use of both hands. Generally, a user uses one hand to firmly hold the toothbrush, and the other hand to dispense tooth paste onto the bristles of a toothbrush by squeezing the tooth paste dispenser. The two hand process, however, at times may be inconvenient, difficult, frustrating, and sometimes impossible. This is especially true if a user is using one hand to perform other activities, such as driving, writing, or activating a television remote control. In addition, some users may have disabilities which impair them from using two hands to properly dispense tooth paste and brush his/her teeth.

[0003] Thus, there is a need for a toothbrush which allows the dispensing of tooth paste and subsequently brushing one's teeth with the use of only one hand. Such a need and others are met with the toothbrushes described in accordance with the invention.

SUMMARY OF THE INVENTION

[0004] An aspect of the invention relates to a toothbrush that is convenient for dispensing tooth paste and subsequently brushing with the use of only one hand. The toothbrush comprises a head portion including a plurality of bristles, an internal chamber, and one or more openings to couple therethrough tooth paste from within the said internal chamber to proximate the bristles. The toothbrush further comprises a neck portion including an internal conduit fluidly coupled to the internal chamber of the head portion. The toothbrush additionally includes a connector portion to mate with a corresponding connector of a separate tooth paste dispenser.

[0005] The connector portion may include a set of threads to mate with a corresponding set of threads of the dispenser's connector. The toothbrush may further include a housing portion to at least partially enclose the separate tooth paste dispenser. The connector portion may be situated within the housing portion. In addition, the toothbrush may further include a thumb rest situated proximate the neck portion.

[0006] Another aspect of the invention relates to another type of toothbrush that is also convenient for dispensing tooth paste and brushing with the use of only one hand. The toothbrush comprises a head portion including a plurality of bristles, an internal chamber, and one or more openings to couple therethrough tooth paste from within the internal chamber to proximate the bristles. The toothbrush also includes a neck portion including an internal conduit fluidly coupled to the internal chamber of the head portion. Additionally, the toothbrush includes a container portion fluidly coupled to the internal conduit of said neck portion. The container portion includes a pushing pad to push fluid from the container portion to the internal conduit of the neck portion. The pushing pad, in turn, comprises a pushing portion situated external to the container portion and a boot situated within the container portion.

[0007] Other aspects, features and techniques of the invention will become apparent to one skilled in the relevant art in view of the following detailed description of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 illustrates a view of an exemplary toothbrush for coupling to a toothpaste dispenser in accordance with an embodiment of the invention;

[0009] FIGS. 2A-B illustrate front and perspectives views of an exemplary toothbrush for coupling to a toothpaste dispenser in accordance with another embodiment of the invention; and

[0010] FIGS. 3A-C illustrate front, side, and disassembled views of an exemplary tooth paste dispensing toothbrush in accordance with another embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0011] FIG. 1 illustrates a view of an exemplary toothbrush 100 for coupling to a toothpaste dispenser 108 in accordance with an embodiment of the invention. The toothbrush 100 comprises a head portion 102, a neck portion 104, and a connector portion 106. The head portion 102, in turn, comprises a plurality of bristles 114, one or more openings 116 fluidly coupled to an internal chamber 118 of the head portion 102. The neck portion 104, in turn, comprises an elongated internal conduit 120 fluidly coupled to the internal chamber 118 of the head portion 102. The connector portion 106 comprises an internal set of threads 122 for mating with a corresponding set of threads 110 of the toothpaste dispenser 108. As customary, the toothpaste dispenser 108 may include a squeezable container 112 or other type of dispensing container.

[0012] In operation, a user screws the connector 106 of the toothbrush 100 onto the corresponding connector 110 of the tooth paste dispenser 108. Once the connectors 106 and 110 are snugly fastened together, the user squeezes the container 112 (or otherwise activates the dispensing mechanism of the container 112) to cause tooth paste contained within the container 112 to flow through the elongated conduit 120 of the neck portion 104, into the internal chamber 118 of the head portion 102, and subsequently out to the bristles 114 by way of the one or more openings 116. At such moment, the user can begin to brush his/her teeth. During brushing, if the user desires more tooth paste, he/she merely squeezes the tooth paste container 112 (or otherwise activates the dispensing mechanism of the container 112) to cause more tooth paste to flow to the bristles 114.

[0013] FIGS. 2A-B illustrate perspective and front views of an exemplary toothbrush 200 for coupling to a toothpaste dispenser 250 in accordance with another embodiment of the invention. The toothbrush 200 comprises a head portion 202, a neck portion 204, and a dispenser housing portion 206. The head portion 202, in turn, comprises a plurality of bristles 214 and one or more openings 216 fluidly coupled to an internal chamber 218 of the head portion 202. The neck portion 204, in turn, comprises an elongated internal conduit 220 fluidly coupled to the internal chamber 218 of the head portion 202, and at an end of the neck portion, an internal set of threads 222 for mating with a corresponding set of threads 252 of the toothpaste dispenser 250.

[0014] The housing portion 206 further includes an internal chamber 224 for at least partially housing the toothpaste dispenser 208 may including its squeezable container 212 or other type of dispensing container. An opening 228 into the housing portion 206 is provided to allow the insertion and removal of the tooth paste dispenser. The housing portion 206 may further include a pushing pad 226 of resilient material. The remaining portion of the housing portion 206 may be comprised of a more rigid material than the pushing pad 226. The toothbrush 200 may further include, along the outer walls of the housing portion 206 and/or the neck portion 204, a thumb rest 230 to allow a user's thumb to rest upon during brushing.

[0015] In operation, a user inserts the tooth paste dispenser 250 into the internal chamber 224 of the housing portion 206 of the toothbrush 200 through the opening 228. Then, the user screws the connector 222 of the toothbrush 200 onto the corresponding connector 252 of the tooth paste dispenser 250. Once the connectors 222 and 252 are snugly fastened together, the user pushes on the pushing pad 226 of the housing portion 206 to squeeze the container 254 (or otherwise activates the dispensing mechanism of the container 254) to cause tooth paste contained within the container 254 to flow through the elongated conduit 220 of the neck portion 204, into the internal chamber 218 of the head portion 202, and subsequently out to the bristles 214 by way of the one or more openings 216. At such moment, the user can begin to brush his/her teeth. During brushing, if the user desires more tooth paste, he/she merely pushes on the pushing pad 226 to further squeeze the tooth paste container 254 (or further activate the dispensing mechanism of the container 254) to cause more tooth paste to flow to the bristles 214.

[0016] FIGS. 3A-C illustrate front, side, and disassembled views of an exemplary tooth paste dispensing toothbrush 300 in accordance with another embodiment of the invention. The toothbrush 300 comprises a head portion 302, a neck portion 304, and a container portion 306 for holding tooth paste. The head portion 302, in turn, comprises a plurality of bristles 314 and one or more openings 316 fluidly coupled to an internal chamber 318 of the head portion 302. The neck portion 304, in turn, comprises an elongated internal conduit 320 fluidly coupled to the internal chamber 318 of the head portion 302. The container portion 306 comprises a pushing pad 322 having a pushing portion 324 situated outside of the container portion 306 through an opening 326 in the container portion 306. The pushing pad 322 further includes a boot portion 328 situated within the container portion 306 for pushing the tooth paste towards the elongated internal conduit 320 of the neck portion 304. The boot portion 328 is inclined in a manner that its width is greater towards the bottom of the container 328. This inclination allows the boot portion 328 to push the tooth paste to the bristles 314 when the user pushes on the pushing pad 322.

[0017] In operation, a user pushes on the pushing pad 322 of the toothbrush 300, which causes the boot portion 328 to push tooth paste within the container 306 to flow through the elongated conduit 320 of the neck portion 304, into the internal chamber 318 of the head portion 302, and subsequently out to the bristles 314 by way of the one or more openings 316. At such moment, the user can begin to brush his/her teeth. During brushing, if the user desires more

tooth paste, he/she merely pushes the pushing pad 322 to cause more tooth paste to flow to the bristles 314.

[0018] In the foregoing specification, the invention has been described with reference to specific embodiments thereof. It will, however, be evident that various modifications and changes may be made thereto without departing from the broader spirit and scope of the invention. The specification and drawings are, accordingly, to be regarded in an illustrative rather than a restrictive sense.

It is claimed:

1. A toothbrush, comprising:

a head portion including a plurality of bristles, an internal chamber, and one or more openings to couple therethrough fluid from within said internal chamber to proximate said bristles;

a neck portion including an internal conduit fluidly coupled to said internal chamber of said head portion; and

a connector portion to mate with a corresponding connector of a separate tooth paste dispenser.

2. The toothbrush of claim 1, wherein said connector comprises a set of threads to mate with a corresponding set of threads of said corresponding connector of said separate tooth paste dispenser.

3. The toothbrush of claim 1, further comprising a housing portion to at least partially enclose said separate tooth paste dispenser.

4. The toothbrush of claim 3, wherein said connector portion is at an end of said neck portion.

5. The toothbrush of claim 1, further comprising a thumb rest situated proximate said neck portion.

6. A toothbrush, comprising:

a head portion including a plurality of bristles, an internal chamber, and one or more openings to couple therethrough fluid from within said internal chamber to proximate said bristles;

a neck portion including an internal conduit fluidly coupled to said internal chamber of said head portion; and

a container portion is fluidly coupled to said internal conduit of said neck portion, wherein said container portion comprises a pushing pad to push fluid from said container portion to said internal conduit of said neck portion, wherein said pushing pad comprises a pushing portion situated external to said container portion and a boot situated within said container portion.

7. The toothbrush of claim 6, wherein said boot is wider at a side of said container portion opposite said neck portion than at a region closer to said neck portion.

8. The toothbrush of claim 6, wherein said width of said boot increases in a direction away from said neck portion.

9. A combination comprising:

a toothbrush comprising:

a head portion including a plurality of bristles, an internal chamber, and one or more openings to couple therethrough fluid from within said internal chamber to proximate said bristles;

a neck portion including an internal conduit fluidly coupled to said internal chamber of said head portion; and

a toothbrush connector portion; and

a tooth paste dispenser comprising:

a container for holding tooth paste; and

a dispenser connector mated to the toothbrush connector.

10. The combination of claim 1, wherein said connector comprises a set of threads to mate with a corresponding set

of threads of said corresponding connector of said separate tooth paste dispenser.

11. The combination of claim 1, further comprising a housing portion to at least partially enclose said separate tooth paste dispenser.

12. The combination of claim 3, wherein said connector portion at an end of said neck portion.

13. The combination of claim 1, further comprising a thumb rest situated proximate said neck portion.

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