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(54) **TOOTHBRUSH FOR USE WITH AN ORTHODONTIC DEVICE**

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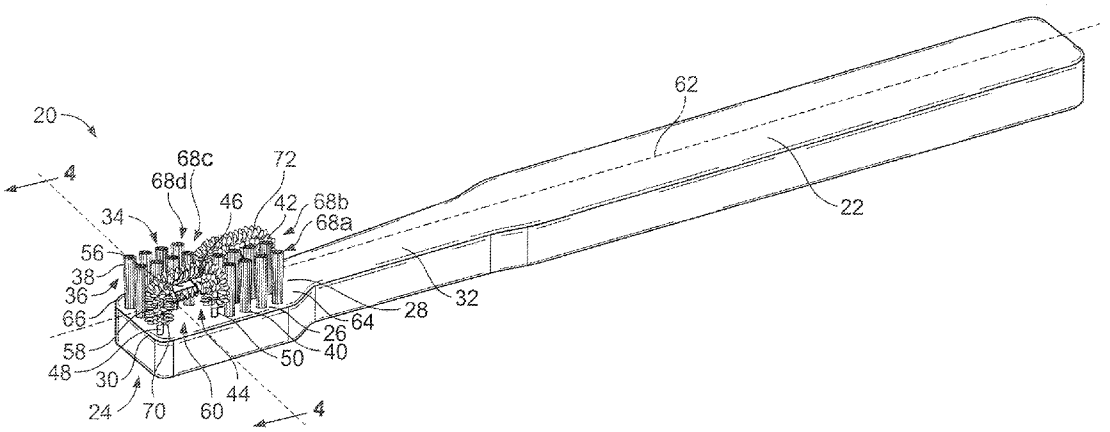
(57) **ABSTRACT**

A toothbrush comprises an elongate handle member. A head member is connected to one end of the handle member and at least one primary cleaning element and at least one secondary cleaning element extend from the head member. The secondary cleaning element include a body portion that extends substantially parallel to a plane of the head member, and first and second spaced legs fixedly extend between the body portion and the head member.



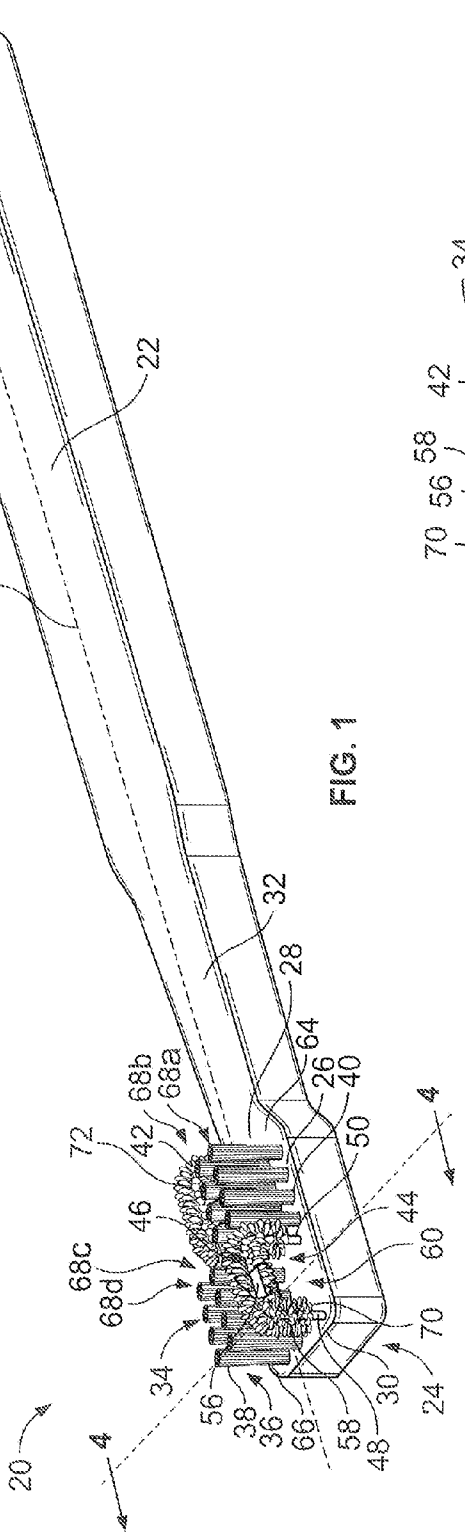
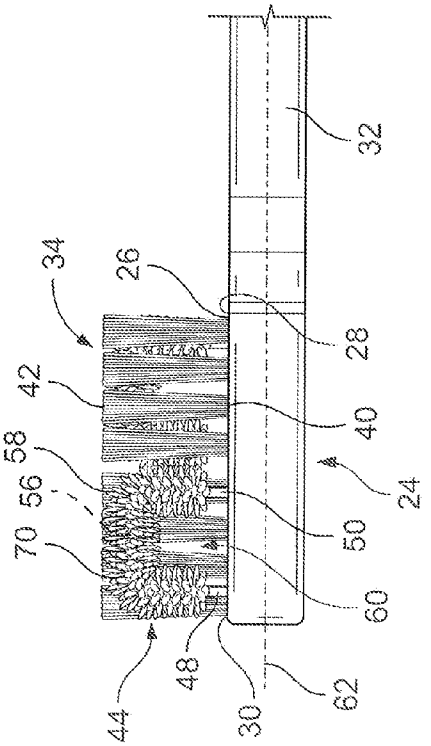

20
22
62
32
28
64
26
40
50
68b
68a
72
42
46
68c
68d
34
56
38
36
66
58
48
30
24
70
60
44
4
4

FIG. 1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34
26
28
42
40
58
56
70
50
24
60
44
48
30
62

FIG. 2

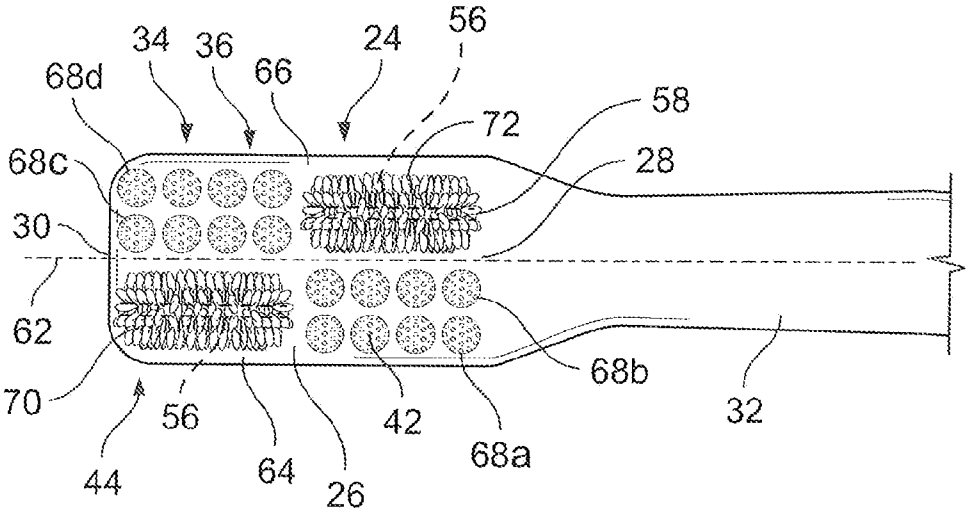
34
36
66
24
56
68d
72
58
68c
28
30
62
68b
70
56
42
32
44
64
26
68a

FIG. 3

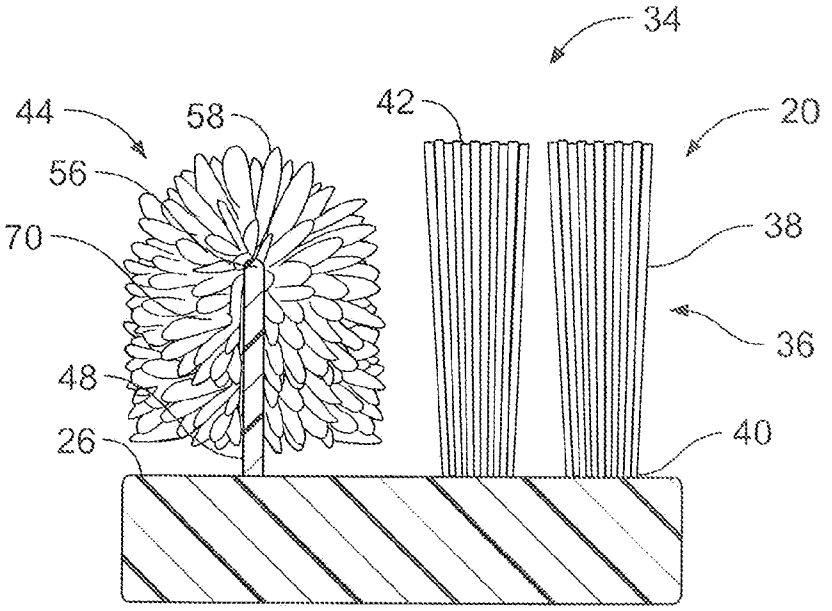
34
44
58
42
20
56
70
38
36
48
26
40

FIG. 4

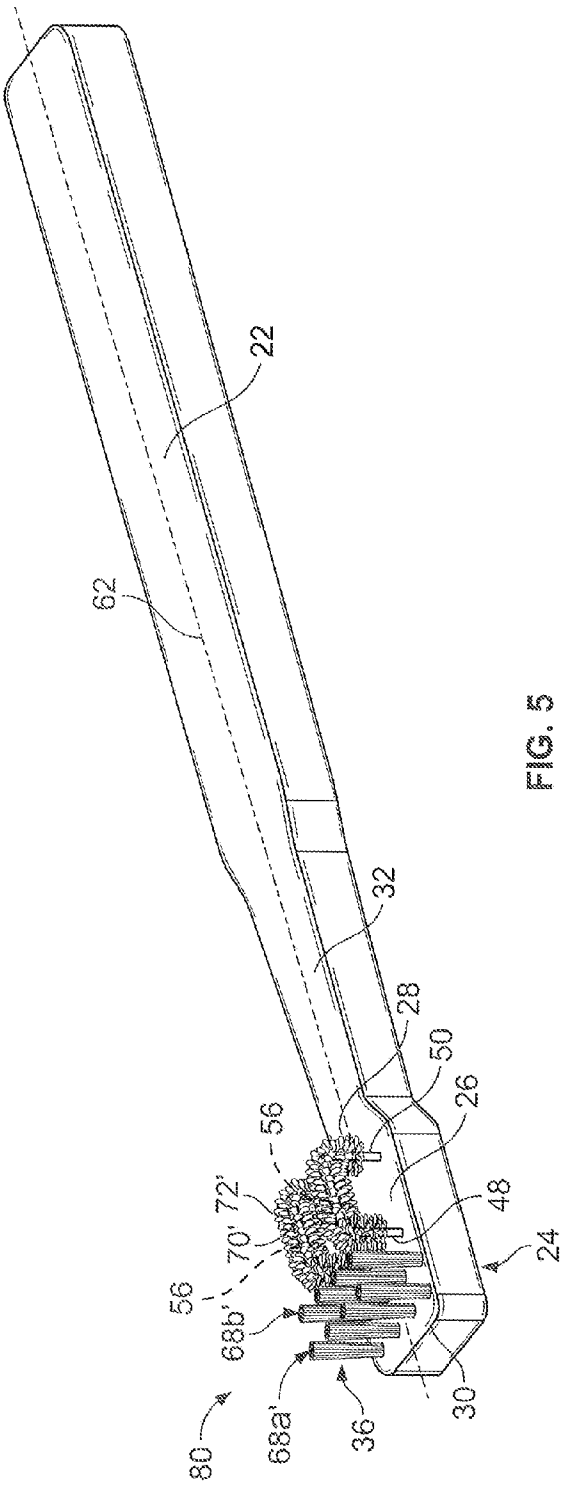
22
62
32
28
50
26
56
72'
70'
48
24
56
68b'
68a'
36
30
80

FIG. 5

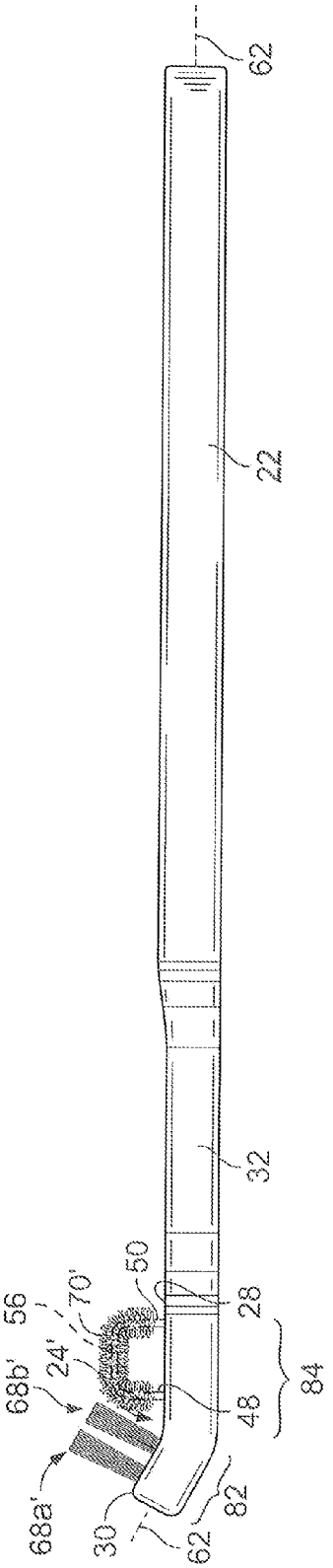
62
22
32
50
28
56
70'
68b'
24'
48
84
68a'
30
82
62

FIG. 5A

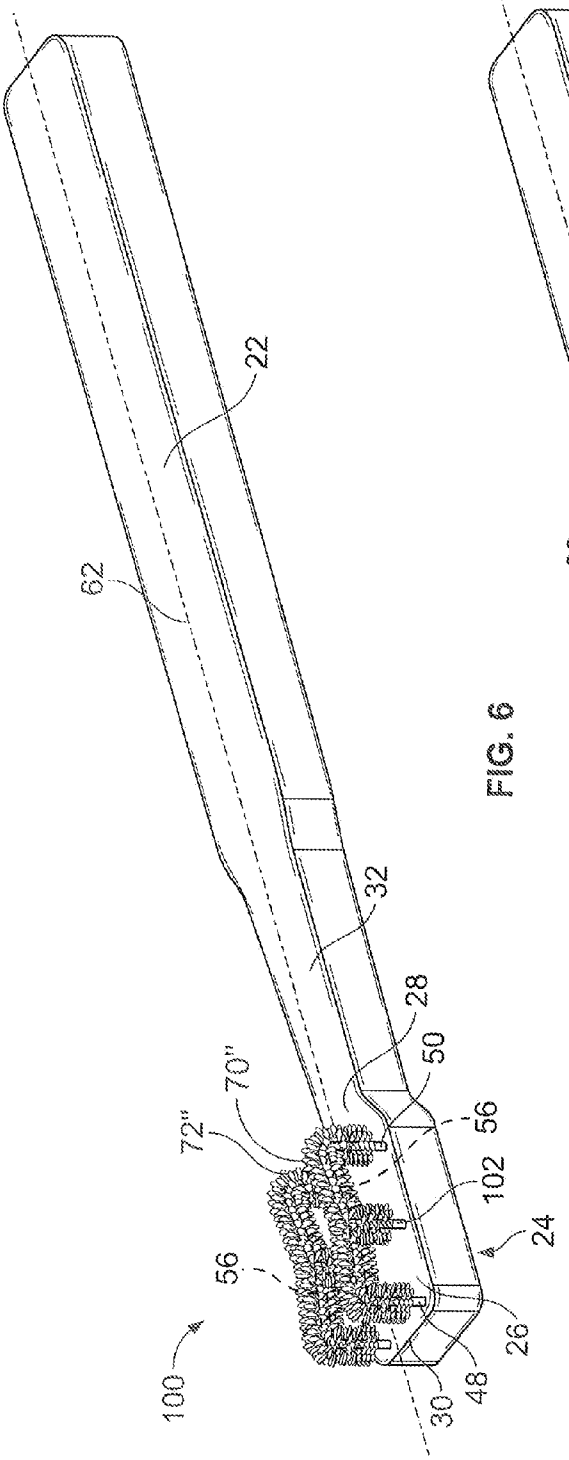
22
62
32
28
50
56
70"
72"
102
24
56
26
48
30
100

FIG. 6

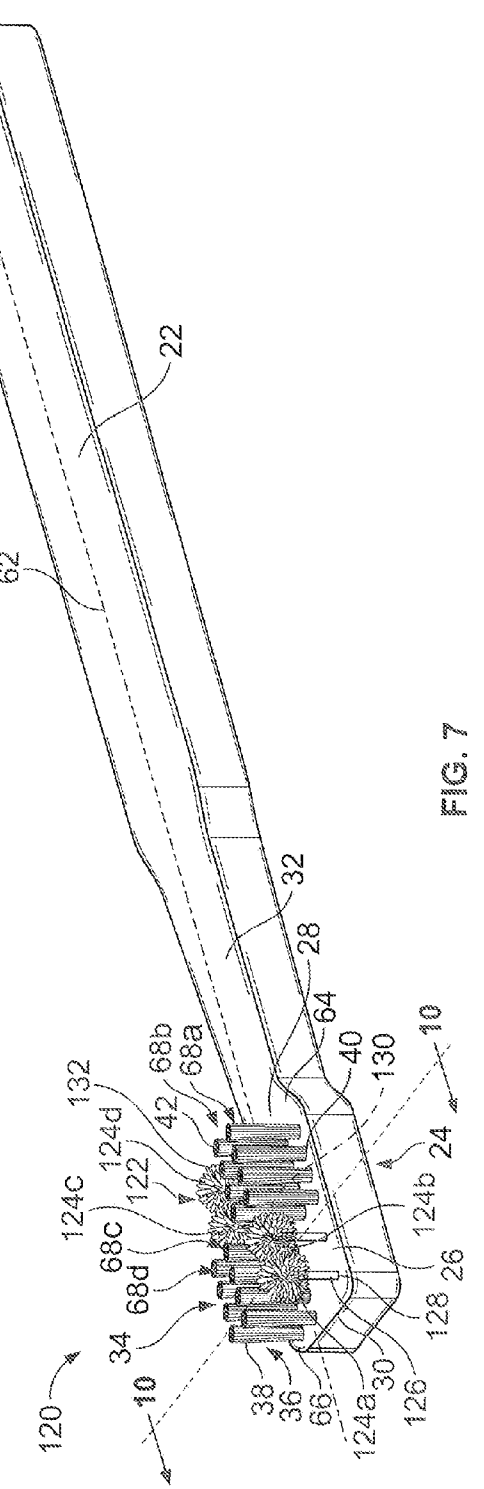
22
62
32
28
64
40
130
10
24
132
68b
68a
42
124d
122
124c
68c
68d
34
124b
26
128
30
126
38
36
66
124a
120
10

FIG. 7

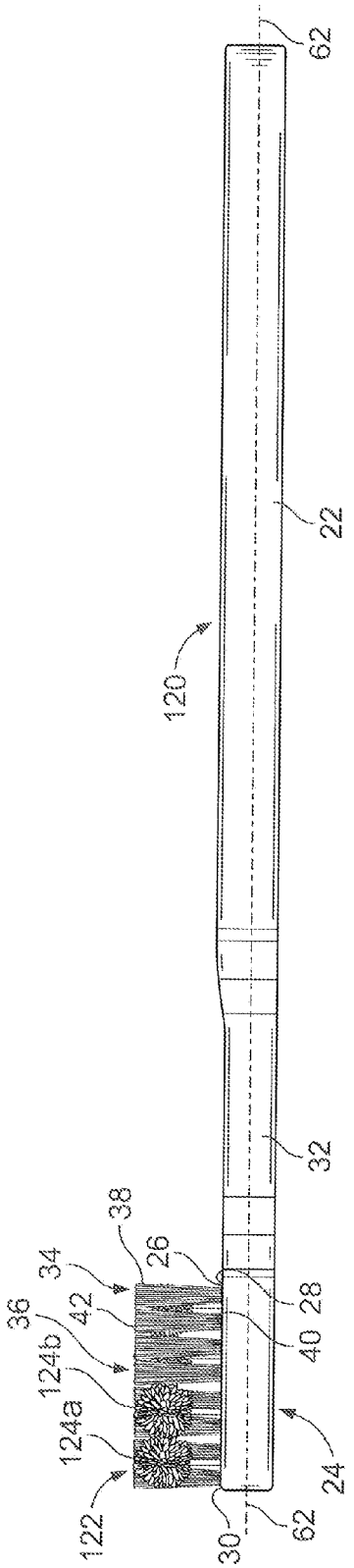

FIG. 8

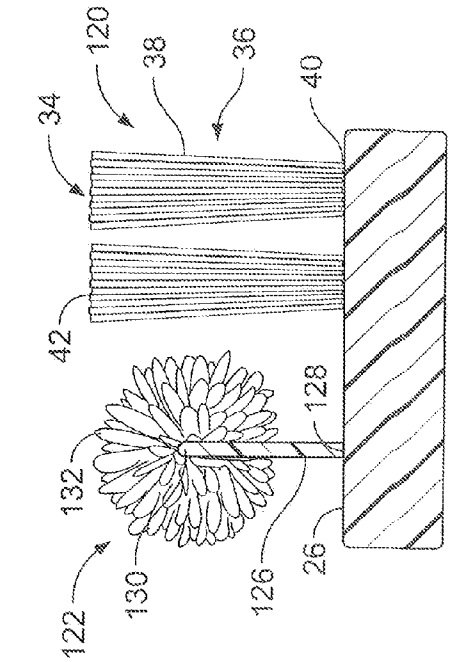

FIG. 10

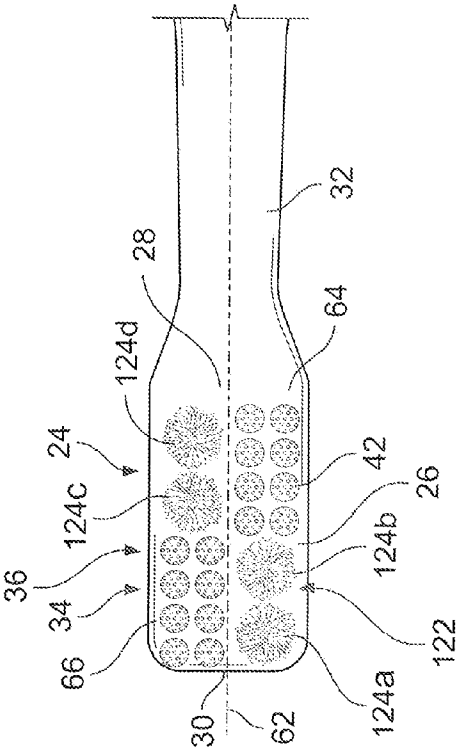

FIG. 9

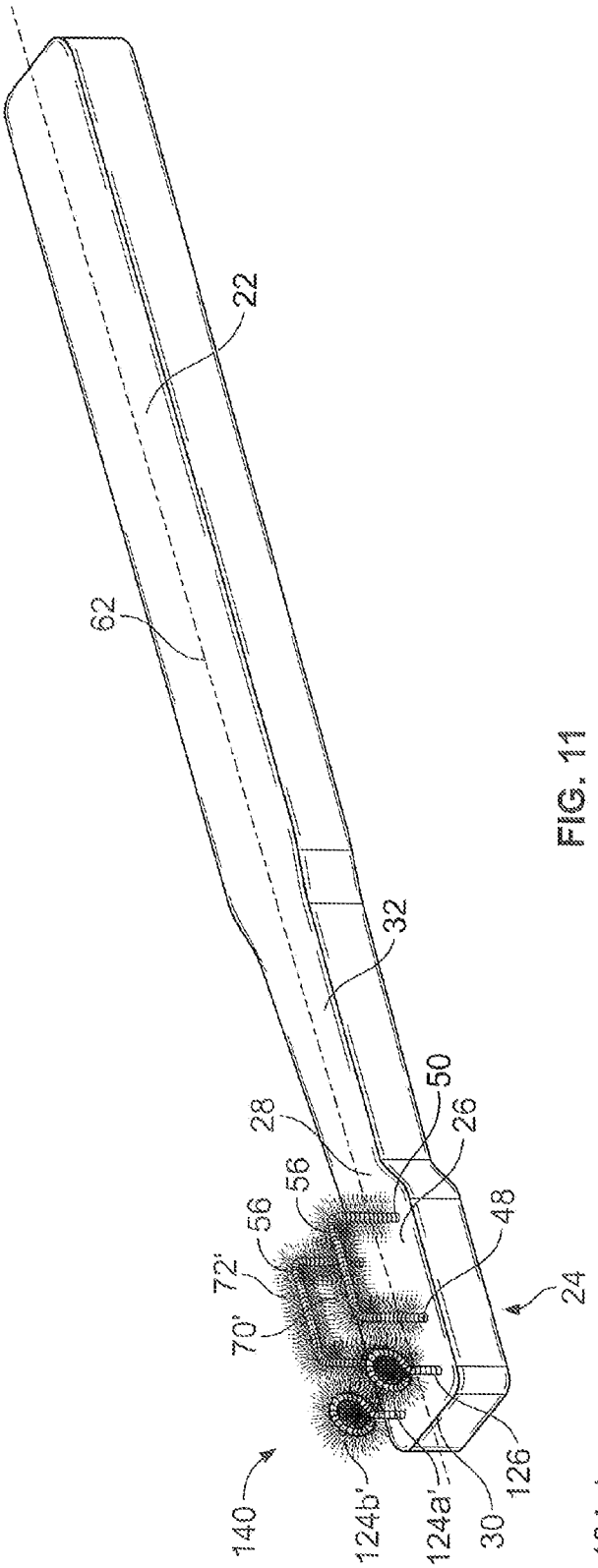

FIG. 11

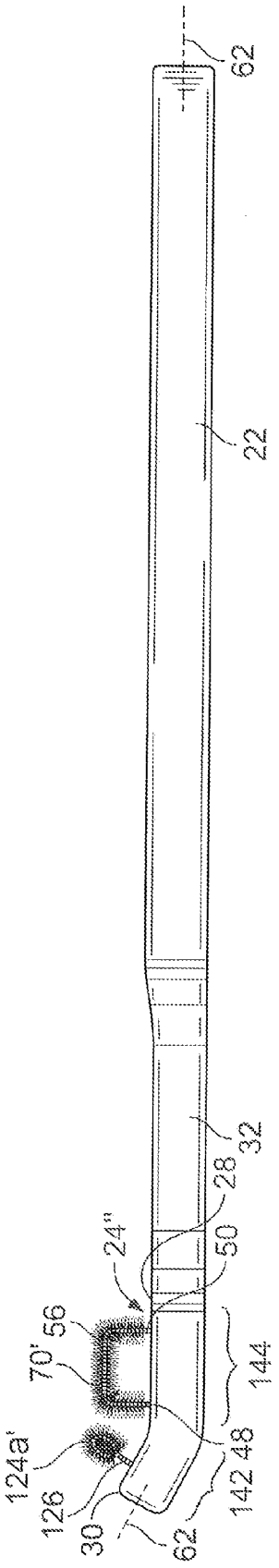

FIG. 11A

TOOTHBRUSH FOR USE WITH AN ORTHODONTIC DEVICE

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] Not applicable.

REFERENCE REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

SEQUENTIAL LISTING

[0003] Not applicable.

BACKGROUND OF THE INVENTION

[0004] 1. Field of the Background

[0005] The present invention generally relates to a toothbrush, and more particularly, to an improved toothbrush for cleaning teeth, gingiva, and an orthodontic device.

[0006] 2. Description of the Background

[0007] People without fixed orthodontic devices may find conventional toothbrushes adequate in removing plaque. However, orthodontic patients with fixed devices, such as braces, face unique challenges in the removal of plaque around these devices and the surrounding teeth and gingiva. It is not uncommon for the level of plaque removal in these types of patients to be unacceptable, as the presence of fixed orthodontic devices prevents conventional toothbrushes from reaching areas around and under the devices where plaque accumulates. A great deal of manual dexterity is therefore required on the part of the patient to properly remove plaque using a conventional toothbrush. The consequences of improper dental care may include various forms of tooth decay. Therefore, there is a need for a toothbrush that can remove plaque that is inaccessible or difficult to reach with a conventional toothbrush in the home or within a dental care practitioner's office.

[0008] Lupossello U.S. Pat. No. 5,537,708 disclosed one known toothbrush for use in cleaning an orthodontic appliance that includes a head having a plurality of upwardly extending brushes. Two elongate brush members perpendicularly overlie the plurality of bristles. Both of the elongate brush members include an unattached end for insertion between orthodontic wires and an opposing end that is connected to a handle of the toothbrush. Luposello does not disclose any upwardly extending bristles that display omnidirectional cleaning capabilities, nor are any of the upwardly extending bristles combined with horizontally or vertically extending omnidirectional cleaning members in the same cleaning plane.

[0009] Massetti U.S. Pat. No. 4,317,463 discloses another known toothbrush that comprises a handle with a cleaning portion on one end thereof. The cleaning portion includes opposing side members having one or more swabs extending transversely therebetween. The swab members are rotatable and include a plurality of bristles extending therefrom. Massetti does not contemplate utilizing non-rotatable cleaning elements, which have been found better suited to cleaning teeth, gingiva, and orthodontic appliances because the cleaning elements do not slip on the surface to be cleaned. Further, the rigid side members holding the swabs with transversely extending bristles are not as effective in orienting the bristles between the teeth, gingiva, and orthodontic appliances, as toothbrushes with more resilient, i.e., elastically deformable, holding elements are.

SUMMARY OF THE INVENTION

[0010] According to one embodiment of the present invention, a toothbrush comprises an elongate handle member. A head member is connected to one end of the handle member and at least one primary cleaning element and at least one secondary cleaning element extend from the head member. The secondary cleaning element includes a body portion that extends substantially parallel to a plane of the head member, and first and second spaced legs fixedly extend between the body portion and the head member.

[0011] According to another embodiment of the present invention, a toothbrush comprises an elongate portion extending between first and second ends. The elongate portion has a head portion on the first end thereof. A multiplicity of bristles extend from a first surface of the head portion and at least one omnidirectional cleaning element extends from the first surface of the head portion. The omnidirectional cleaning element includes a stem extending substantially transversely from the first surface and a plurality of cleaning surfaces extending radially from a distal end of the stem.

[0012] According to yet another embodiment of the present invention, a toothbrush comprises a brushing head that includes a brushing surface and a handle extending from a proximal end thereof. A plurality of tufts is disposed on the brushing surface. Each tuft comprises a multiplicity of bristles extending substantially transversely from the brushing surface. At least two vertical posts extend from the brushing surface in a direction substantially transverse to same, wherein a plurality of bristles extends radially from the two posts.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Other aspects and advantages of the present invention will become apparent upon reading the following detailed description and upon reference to the drawings in which:

[0014] FIG. **1** is an isometric view of a toothbrush that includes a head with a plurality of primary and secondary cleaning elements extending therefrom, wherein one of the primary and the secondary elements includes a cut-away portion;

[0015] FIG. **2** is a side elevational view of the head of the toothbrush of FIG. **1**;

[0016] FIG. **3** is a plan view of the head of the toothbrush of FIG. **1**;

[0017] FIG. **4** is a sectional view of the head of the toothbrush taken substantially along the line **4-4** of FIG. **1**;

[0018] FIG. **5** is an isometric view of a second embodiment of the toothbrush;

[0019] FIG. **5**A is a side elevational view of a variation of the toothbrush depicted in FIG. **5**;

[0020] FIG. **6** is an isometric view of a third embodiment of the toothbrush;

[0021] FIG. **7** is an isometric view of a fourth embodiment of the toothbrush;

[0022] FIG. **8** is a side elevational view of the toothbrush of FIG. **7**;

[0023] FIG. **9** is a plan view of a head of the toothbrush of FIG. **7**;

[0024] FIG. **10** is a sectional view of a head of the toothbrush taken substantially along the line **10-10** of FIG. **7**;

[0025] FIG. **11** is an isometric view of a fifth embodiment of the toothbrush; and

[0026] FIG. **11**A is a side elevational view of a variation of the toothbrush depicted in FIG. **11**.

DETAILED DESCRIPTION OF THE INVENTION

[0027] Referring to FIGS. **1-4**, a toothbrush **20** with an improved brushing head for removing plaque from teeth, gingiva, and orthodontic devices is illustrated. The toothbrush **20** generally includes an elongate handle member **22**, a head member **24**, and several brushing elements, which will be described in greater detail below. The handle member **22** and the head member **24** are integral with one another and formed by conventional injection molding techniques. However, it is also anticipated that the brushing elements may be incorporated into toothbrushes fabricated from multiple components (not shown) or included in an electric toothbrush having a known attachment and drive means (not shown).

[0028] With particular reference to FIGS. **1**, **2**, and **4**, the head member **24** is depicted to have a planar top surface **26** that extends between first and second ends **28**, **30**, respectively, of the head member **24**. The first end **28** of the head member **24** is connected to the handle member **22** by a neck **32**, which has a narrower cross-section than either the handle member **22** or the head member **24**. A plurality of primary cleaning elements **34** is disposed on the top surface **26** of the head member **24**. In the present embodiment, the plurality of primary cleaning elements **34** comprise a plurality of tufts **36** that include a multiplicity of primary bristles **38**. As seen in FIGS. **2** and **4**, the primary bristles **38** have proximal ends **40** attached to the head member **24** and distal ends **42** extending outwardly from the head member **24**. In the present embodiment, the primary bristles **38** extend substantially transversely from the top surface **26** of the head member **24**. However, it is anticipated that the primary cleaning elements **34** may comprise any manner of bristle or cleaning element known to those skilled in the art and may similarly be provided with any manner of orientation.

[0029] With reference again to FIGS. **1-4**, it may also be seen that a plurality of secondary cleaning elements **44** is disposed on the top surface **26** of the head member **24**. Each of the secondary cleaning elements **44** comprises a generally U-shaped member **46**. As seen in FIG. **1**, the U-shaped member **46** includes first and second leg portions **48**, **50**, respectively, that have proximal ends attached to the head member **24** and distal ends extending outwardly from the head member **24**. The leg portions **48**, **50** of the present embodiment are depicted as extending substantially transversely from the planar top surface **26** of the head member **24**, however, it is anticipated that other embodiments may utilize any combination of angled or transversely oriented vertical posts that extend upwardly and outwardly from the top surface **26**. The U-shaped member **46** further includes a body portion **56** fixedly connected to the leg portions **48**, **50** and spaced a first distance from the top surface **26**. FIGS. **1** and **2** illustrate that the leg portions **48**, **50** are connected to opposing ends of the body portion **56**. However, the present embodiment is not limited to such a construction, rather, it is contemplated that one or more of the distal ends of the leg portions **48**, **50** may be disposed interiorly from the opposing ends of the body portion **56**.

[0030] The secondary cleaning elements **44** further include a multiplicity of secondary bristles **58** that extend radially from the body portion **56**. In a preferred embodiment, the secondary bristles **58** extend substantially transversely from a centerline of the body portion **56**. In another preferred embodiment, the secondary bristles **58** extend radially from the body portion **56** at a number of different angles from the centerline thereof. In the present embodiment, the secondary cleaning elements **44** also include a multiplicity of secondary bristles **58** extending from the leg portions **48**, **50**. It is contemplated that the secondary bristles **58** will extend from the leg portion **48**, **50**, and from any transition zone between the leg portions **48**, **50** and the body portion **56**, in a similar manner as described above. Further, other embodiments of the present invention may include secondary bristles **58** extending the entire length of the leg portions **48**, **50** or extending only partially about the leg portions **48**, **50** and/or the body portion **56**.

[0031] FIGS. **1-4** illustrate that a cavity **60** is provided between the secondary bristles **58** of the U-shaped member **46**. During a brushing stroke, the secondary bristles **58** will channel some of the removed plaque or debris through the cavity **60** for ease of removal. Further, the cavity **60** provides a user or dental professional an easily accessible point to clean the secondary bristles **58** and other portions of the secondary cleaning element **44**. The size of the cavity **60** is dependent on any number of modifiable factors, including the height of the leg portions **48**, **50**, the width of the body portion **56**, the spacing of the leg portions **48**, **50** on the body portion **56**, and the density, angle of projection, inclusion, and length of the secondary bristles **58** on the leg portions **48**, **50** and/or the body portion **56**.

[0032] The secondary cleaning elements **44** are manufactured by any one of several technologies currently known by those skilled in the art. In the present embodiment, the secondary cleaning elements **44**, including the attendant leg portions **48**, **50**, the body portion **56**, and the secondary bristles **58**, are formed by an injection molding process. Therefore, the body portion **56** and the leg portions **48**, **50** are formed integrally with the radially extending secondary bristles **58**. While any type of thermoplastic material may be used, in a preferred embodiment a co-polymer or synthetic polymer, such as nylon or polyester, is utilized. Injection molding processes will also allow the secondary bristles **58** to be formed with other bristles radiating about the length of any of the secondary bristles **58**. Indeed, any number of bristles may be provided that radiate from any number of additional bristles. The addition of such bristles will increase the extent to which the secondary cleaning elements **44** can reach between wires, undercuts, or other areas of orthodontic devices. The additional bristles may also increase the abrasiveness of the secondary cleaning elements **44** to aid in plaque removal.

[0033] It is also anticipated that the secondary cleaning elements **44** may be manufactured in a multitude of other ways. In one embodiment the U-shaped member **46** of the secondary cleaning element **44** is formed by bending or otherwise deforming multiple wire strands into the above described shape, such as depicted in connection with the embodiments shown in FIGS. **11** and **11**A that are described in further detail below. The secondary bristles **58** are comprised of portions of the wire strands that radiate from the

U-shaped member **46**. In a third embodiment, the secondary bristles **58** comprise microfibers, such as nylon or polyester, which are glued to portions of the U-shaped member **46**. In the third embodiment, it is contemplated that portions of the U-shaped member **46** may comprise either a similar or dissimilar material than used to create the secondary bristles **58**. In a fourth embodiment, the secondary bristles **58** comprise a co-polymer or synthetic polymer and are tied around the U-shaped member **46**. Similar to the third embodiment, the U-shaped member **46** of the fourth embodiment may be comprised of a similar or dissimilar thermoplastic material than the secondary bristles **58**.

[0034] In any of the embodiments described herein, the primary and secondary cleaning elements **34**, **44** may be attached to the head member **24** of the toothbrush **20** in any number of conventional manners. For example, the present embodiment depicted in FIGS. **1-4** may be formed by a single or multiple step injection molding process to fabricate the handle member **22**, the head member **24**, and the primary and secondary cleaning elements **34**, **44**. In other embodiments, the primary and secondary cleaning elements **34**, **44** are attached to the head member **24** by techniques such as thermoforming, fushion, welding, and the like. Other conventional methods such as the stapling of the primary and the secondary cleaning elements **34**, **44** to the head member **24** may also be utilized.

[0035] With reference again to FIG. **3**, a longitudinal axis **62** of the handle member **22** separates the head member **24** into first and second cleaning portions **64**, **66**, respectively. The primary cleaning elements **34** of the present embodiment are the plurality of tufts **36**, which are arranged into first, second, third, and fourth rows **68***a-d*, respectively. The first and second rows **68***a*, **68***b* are disposed adjacent the first end **28** of the head member **24** on the first cleaning portion **64** and are aligned in a parallel manner to each other and the longitudinal axis **62**. The third and fourth rows **68***c*, **68***d* are disposed adjacent the second end **30** of the head member **24** on the second cleaning portion **66** and are similarly aligned in a parallel manner to each other and the longitudinal axis **62**. The secondary cleaning elements **44** of the present embodiment comprise a first secondary cleaning element **70** and a second secondary cleaning element **72**. The cleaning element **70** is disposed adjacent the second end **30** of the head member **24** on the first cleaning portion **64** and the cleaning element **72** is disposed adjacent the first end **28** of the head member **24** on the second cleaning portion **66**. Both of the cleaning elements **70**, **72** are parallel with one another and the longitudinal axis **62**.

[0036] A second embodiment of a toothbrush **80** is depicted in FIG. **5**. The second embodiment is similar to the previously described first embodiment except that the second embodiment includes only first and second rows **68***a'*, **68***b'* of tufts **36**, which are disposed adjacent the second end **30** of the head member **24** in a manner perpendicular to the longitudinal axis **62**. Further, the body portions **56** of first and second secondary cleaning elements **70'**, **72'** are disposed adjacent the first end **28** of the head member **24** and are aligned in a parallel manner with one another and the longitudinal axis **62**.

[0037] FIG. **5**A depicts a variation of the head member **24** of the toothbrush **80** shown in FIG. **5**. A head member **24'** is identical to the head member **24** except for the inclusion of an angle in the top surface **26**. Specifically, a toe portion **82** of the head member **24'** disposed adjacent the second end **30** thereof is angled with respect to a heel portion **84** of the head member **24'** disposed adjacent the first end **28** thereof. The toe portion **82** may be angled in any manner from the heel portion **84**, however, it is preferred that the toe portion **82** be angled from the heel portion **84** from about 0° to about 45°. In the present embodiment, the first and second secondary cleaning elements **70'** and **72'** extend substantially parallel to a plane of the head member **24'** on the heel portion **84** and the first and second rows **68***a'*, **68***b'* of tufts **36** extend substantially perpendicularly from a plane of the head member **24'** on the toe portion **82**.

[0038] A third embodiment of a toothbrush **100** is depicted in FIG. **6**. The present embodiment is similar to the previously described embodiments, except that only first and second secondary cleaning elements **70"**, **72"** are provided on the head member **24**. Both of the cleaning elements **70"**, **72"** are aligned in a parallel manner with one another and the longitudinal axis **62**. Further, both of the cleaning elements **70"**, **72"** include a third leg portion **102** disposed interiorly of the first and second leg portions **48**, **50**. The body portion **56** of both of the cleaning elements **70"**, **72"** angles downwardly from opposing ends thereof toward the third leg portion **102**. The angle between the first and second leg portions **48**, **50** and the third leg portion **102** may be modified as desired, but it is preferred that the body portion **56** be substantially parallel to the planar top surface **26** of the head member **24**. It is also contemplated that in other embodiments one or more leg portions may be spaced anywhere between the first and second leg portions **48**, **50**. In yet another embodiment, the cleaning elements **70"**, **72"** may include only the first and second leg portions **48**, **50**. In a different embodiment, only one of the cleaning elements **70"**, **72"** is provided. Alternatively, any of the disclosed embodiments may have upper portions of their leg portions **48**, **50** or their body portions **56** angled inwardly or outwardly uniformly or non-uniformly from the longitudinal axis **62**, e.g., the body portion **56** may be angled inwardly toward the longitudinal axis **62** to form a v-shape that is not parallel with same or the entire upper portion of one of the cleaning elements **70"**, **72"** may be uniformly angled toward the longitudinal axis **62** so that the body portion **56** is parallel therewith.

[0039] A fourth embodiment of a toothbrush **120** is depicted in FIGS. **7-10**. The present embodiment is similar to the embodiment described in connection with FIGS. **1-4** except that the plurality of secondary cleaning elements **44** has been replaced by a plurality of omnidirectional cleaning elements **122**. The present embodiment includes first, second, third, and fourth omnidirectional cleaning elements **124***a-d*, respectively. Each of the omnidirectional cleaning elements **124***a-d* includes an elongate stem **126** having a proximal end **128** attached to the head member **24** and a distal end **130** extending outwardly from the top surface **26** of the head member **24**. The stem **126** of the present embodiment extends substantially transversely from the top surface **26** of the head member **24**. However, in other embodiments the stem **126** or other member may be angled to any degree as desired. A multiplicity of cleaning surfaces **132** extend radially from the distal end **130** of the stem **126**, thereby imparting a somewhat spherical appearance to upper ends of the omnidirectional cleaning elements **124***a-d*. A second multiplicity of cleaning surfaces (not shown) may also be provided around a portion of the stem **126**. However, it is preferred that at least some clearance between the top

surface **26** of the head member **24** and the multiplicity of cleaning surfaces **132** exist to impart a clearance area similar to the cavity **60** described in connection with the first embodiment.

[0040] The plurality of omnidirectional cleaning elements **122** may comprise similar materials and structure as noted above in connection with the plurality of secondary cleaning elements **44**. For example, any of the structural components, materials, or designs employed in connection with the secondary bristles **58** or leg portions **48**, **50**, may be likewise utilized in connection with the cleaning surfaces **132** and the stem **126**, respectively, of the present embodiment. Further, any of the manufacturing or fabrication techniques and modifications thereof discussed herein may be employed to create the omnidirectional cleaning elements **122**. While the plurality of omnidirectional cleaning elements **122** is provided with a substantially different configuration than the plurality of secondary cleaning elements **44**, the similar utilization of radially extending bristles and/or cleaning surfaces in conjunction with areas of clearance offer advantages presently unknown to patients with orthodontic devices.

[0041] As noted above, the present embodiment has a similar layout as the first embodiment depicted in FIGS. **1**-**4**. However, the first secondary cleaning element **70** is replaced by the omnidirectional cleaning elements **124***a*, **124***b*, which are disposed in a row adjacent the second end **30** of the head member **24** that is parallel with the longitudinal axis **62** and spaced a first distance from same. Similarly, the second secondary cleaning element **72** is replaced by the omnidirectional cleaning elements **124***c*, **124***d*, which are disposed in a row adjacent the first end **28** of the head member **24** that is parallel to the longitudinal axis **62** and spaced a second distance from same. In the present embodiment, the first and second distances are equal, however, other embodiments may provide for an unequal spacing. It is contemplated that any of the embodiments described above may utilize one or more omnidirectional cleaning elements in lieu of, or in combination with, one or more primary or secondary cleaning elements. For example, FIG. **11** depicts a fifth embodiment of a toothbrush **140** that is similar to the toothbrush **80** depicted in FIG. **5**, except that the primary cleaning elements are omnidirectional cleaning elements **124***a'*, **124***b'* that are disposed adjacent the second end **30** of the head member **24** and in alignment with the secondary cleaning elements **70'**, **72'** about the longitudinal axis **62**. Further, FIG. **11**A depicts a variation of the toothbrush **140** depicted in FIG. **11** that includes a toe portion **142** of a head member **24"** angled with respect to a heel portion **144** thereof in a similar manner as shown in FIG. **5**A.

[0042] As can be readily discerned from the present disclosure, any number of primary, secondary, or omnidirectional cleaning elements may be provided. It is anticipated that some embodiments may only utilize one of the secondary or omnidirectional cleaning elements, while other embodiments may be entirely comprised of secondary or omnidirectional cleaning elements. Further, while the embodiments described herein depict various cleaning elements having distal ends substantially coextensive with one another, the heights of any of the primary, secondary, or omnidirectional cleaning elements may be varied as desired.

[0043] Numerous modifications will be apparent to those skilled in the art in view of the foregoing description. Accordingly, this description is to be construed as illustrative only and is presented for the purpose of enabling those skilled in the art to make and use the invention and to teach the best mode of carrying out same. The exclusive rights to all modifications which come within the scope of the appended claims are reserved.

I claim:

1. A toothbrush, comprising:

an elongate handle member;

a head member connected to one end of the handle member; and

at least one primary cleaning element and at least one secondary cleaning element extending from the head member,

wherein the secondary cleaning element includes a body portion that extends substantially parallel to a plane of the head member, and first and second spaced legs that fixedly extend between the body portion and the head member.

2. The toothbrush of claim **1**, wherein the body portion of the secondary cleaning element is spaced a first distance from the head member.

3. The toothbrush of claim **1**, wherein a proximal end of the body portion is spaced from the head member and a distal end of the body portion is coextensive with a distal end of least one of the primary cleaning elements.

4. The toothbrush of claim **1**, wherein a multiplicity of bristles extend radially from a centerline of the body portion.

5. The toothbrush of claim **4**, wherein a multiplicity of bristles extend radially form centerlines of the first and second spaced legs.

6. The toothbrush of claim **1**, wherein the first and second spaced legs are connected to opposing ends of the body portion.

7. The toothbrush of claim **6**, wherein the first and second spaced legs extend between the body portion and the head member in a direction substantially transverse to the plane of the head member.

8. The toothbrush of claim **1**, wherein a second secondary cleaning element having a second body portion extending substantially parallel to the plane of the head member is provided, and wherein the second body portion is substantially parallel to the body portion of the first cleaning element.

9. The toothbrush of claim **1**, wherein the primary cleaning element comprises at least one bristle extending from the head member in a direction substantially transverse to the plane of the head member.

10. The toothbrush of claim **1**, wherein the primary cleaning element comprises a plurality of bristles extending radially from a distal end of a member.

11. The toothbrush of claim **1**, wherein the secondary cleaning element includes a third leg spaced between the first and second spaced legs and wherein the third leg fixedly extends between the body portion and the head member.

12. A toothbrush, comprising:

an elongate portion extending between first and second ends, the elongate portion having a head portion on the first end thereof;

a multiplicity of bristles extending from a first surface of the head portion; and

at least one omnidirectional cleaning element extending from the first surface of the head portion,

wherein the omnidirectional cleaning element includes a stem extending substantially transversely from the first

surface and a plurality of cleaning surfaces extending radially from a distal end of the stem.

13. The toothbrush of claim **12**, wherein the multiplicity of bristles extend substantially transversely from the first surface of the head portion.

14. The toothbrush of claim **12**, wherein a distal end of the omnidirectional cleaning element is coextensive with a distal end of one of the multiplicity of bristles.

15. The toothbrush of claim **12**, wherein a second plurality of cleaning surfaces extend radially from a medial portion of the stem.

16. The toothbrush of claim **12**, wherein the omnidirectional cleaning element is disposed proximate a second omnidirectional cleaning element.

17. The toothbrush of claim **12**, wherein the head portion includes a longitudinal axis defining opposing sides of the first surface, and wherein the omnidirectional cleaning element is spaced a first distance from the longitudinal axis on a first side and a second omnidirectional cleaning element is spaced a second distance on a second side.

18. The toothbrush of claim **17**, wherein the omnidirectional cleaning element is disposed adjacent a distal end of the head portion and the second omnidirectional cleaning element is disposed adjacent a proximal end of the head portion.

19. The toothbrush of claim **17**, wherein the first distance is equal to the second distance.

20. A toothbrush, comprising:

a brushing head including a brushing surface and a handle extending from a proximal end thereof;

a plurality of tufts disposed on the brushing surface, each tuft comprising a multiplicity of bristles extending substantially transversely from the brushing surface; and

at least two vertical posts extending from the brushing surface in a direction substantially transverse to same, wherein a plurality of bristles extend radially from the two posts.

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