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(54) **MULTI-PURPOSE GROOMING TOOLS**

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(60) Provisional application No. 61/893,496, filed on Oct. 21, 2013.

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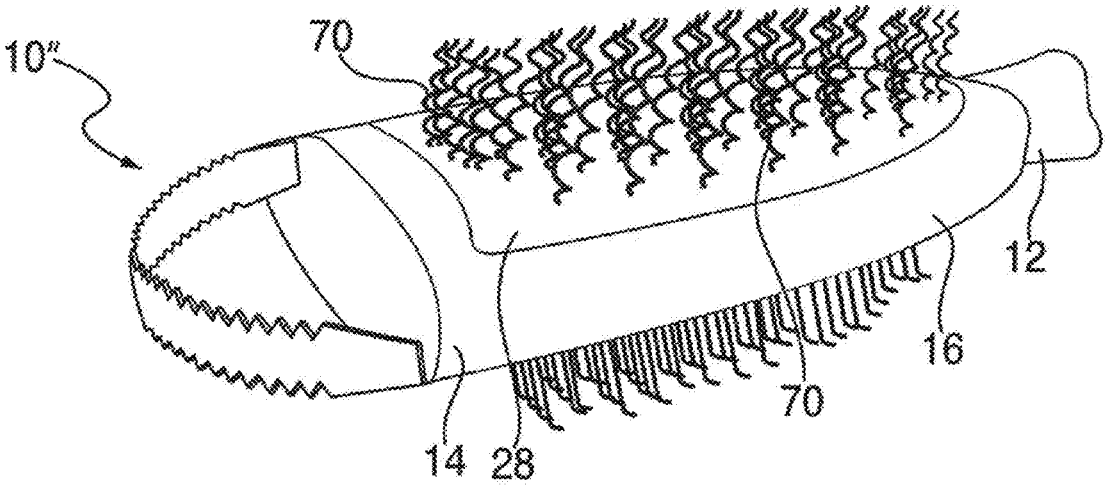
A46D 1/00	(2006.01)

(52) **U.S. Cl.**

CPC ***A01K 13/002*** (2013.01); ***A46D 1/0253*** (2013.01); ***A46B 5/0008*** (2013.01); ***A46B 9/023*** (2013.01); *A46B 2200/1093* (2013.01)

(57) **ABSTRACT**

Grooming tools are provided, including a brush configured for removing debris and hairs, including at least one surfaced body having a first pad, a plurality of first bristles extending from the first pad, one end of each first bristle being connected to the pad, and the bristles being helical in shape. A multi-purpose comb includes a housing having a pair of sidewalls defining a central cavity, and a plurality of foldable combs pivotably mounted at corresponding ends to the housing for insertion into, and withdrawal from the cavity.



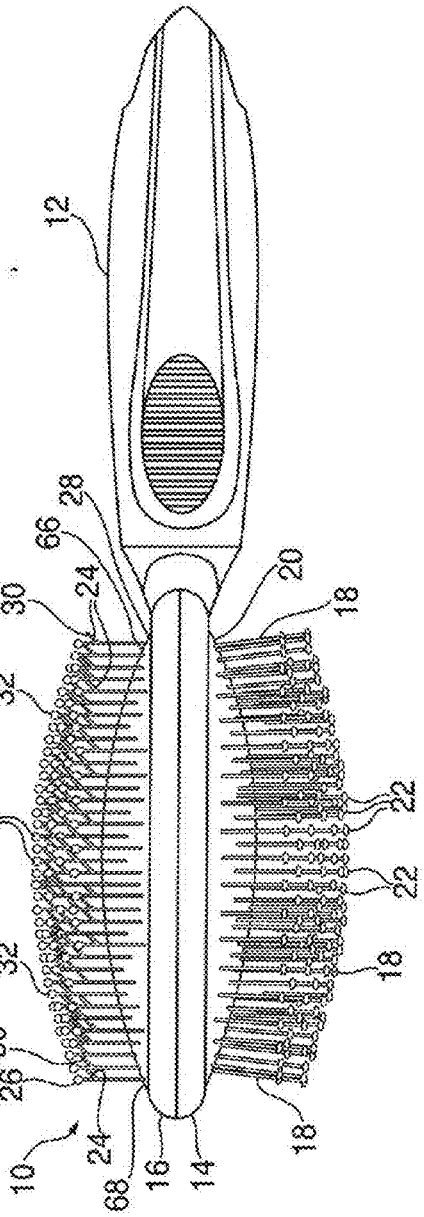

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FIG. 1

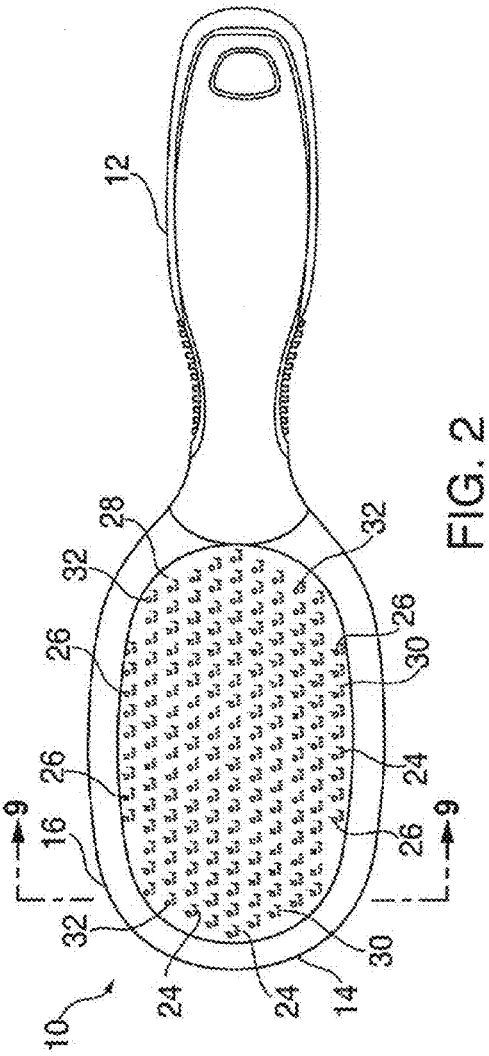
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FIG. 2

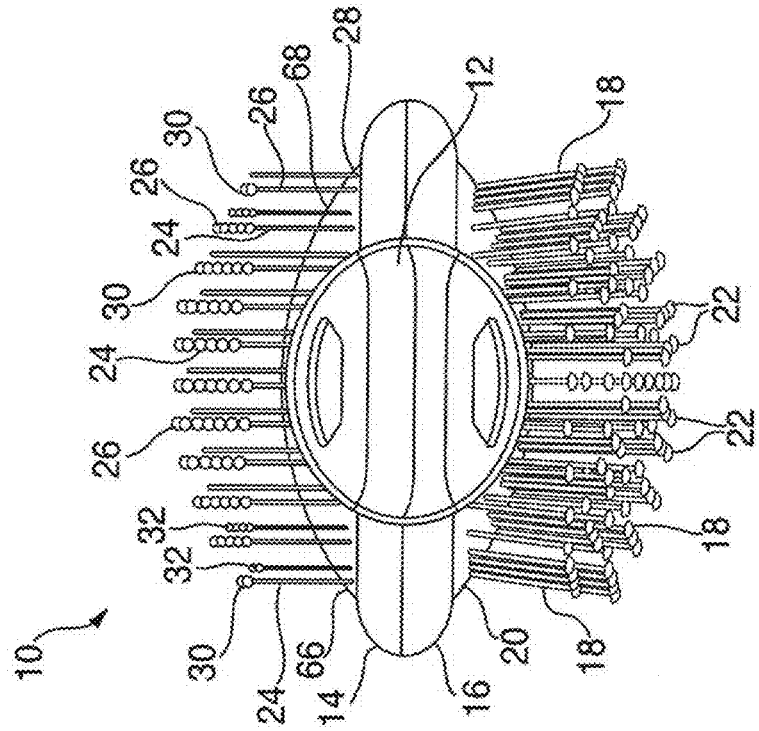
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FIG. 4

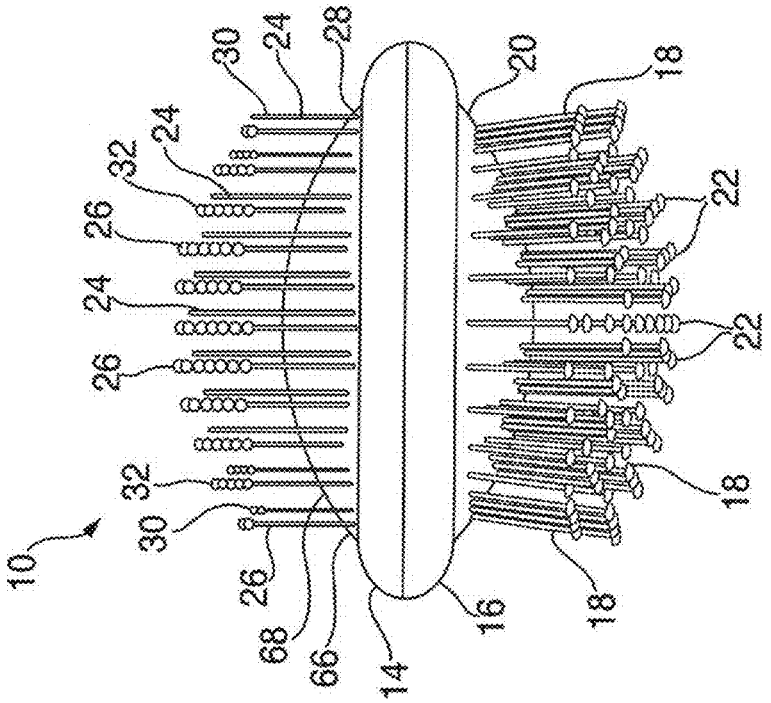
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FIG. 3

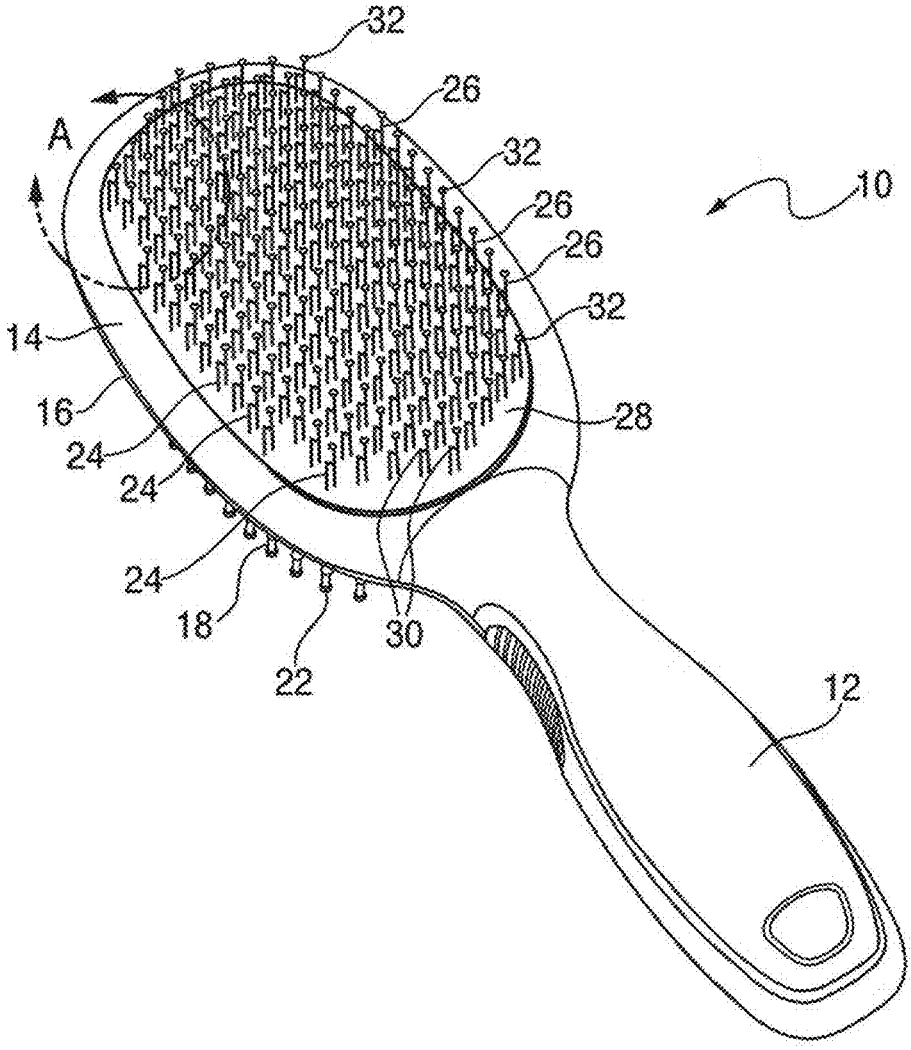
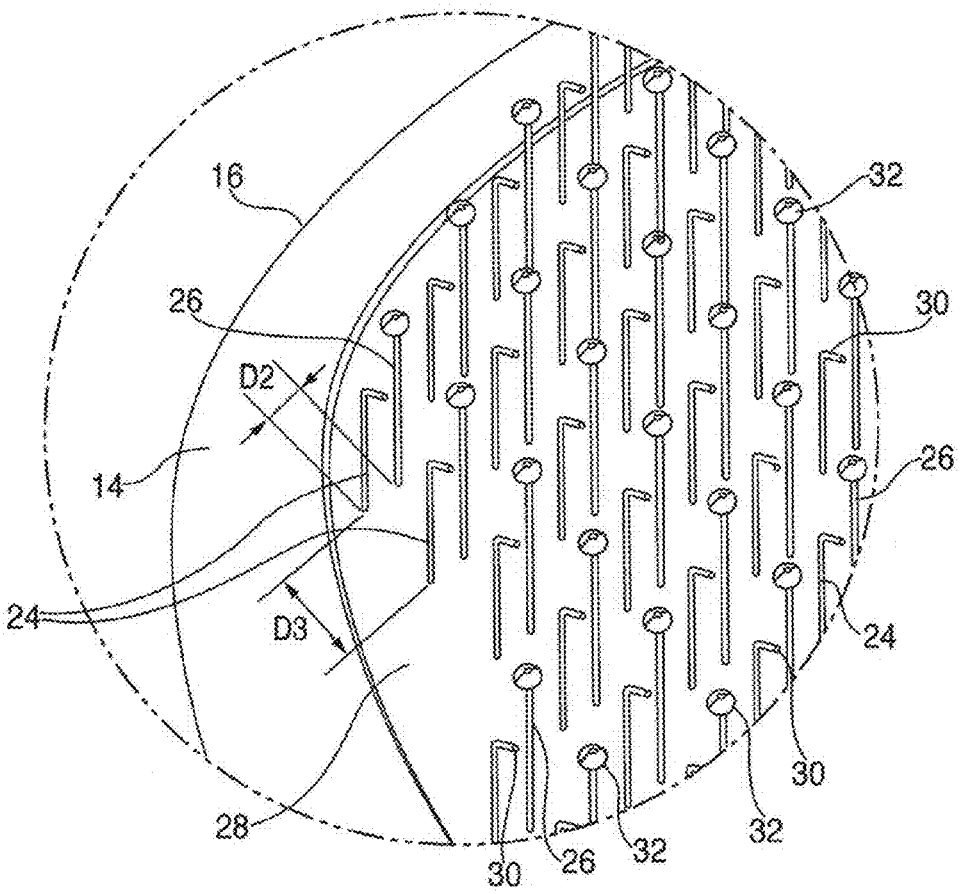


FIG. 5



DETAIL A

FIG. 6

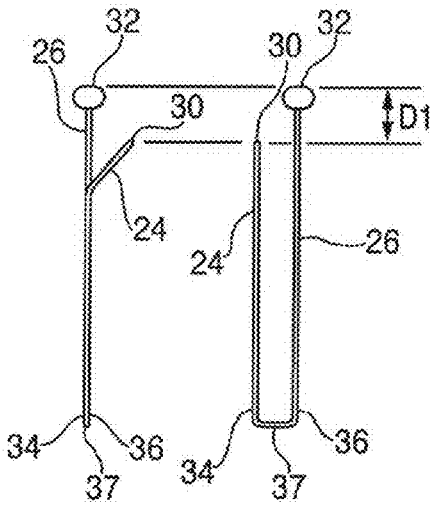


FIG. 6A FIG. 6B

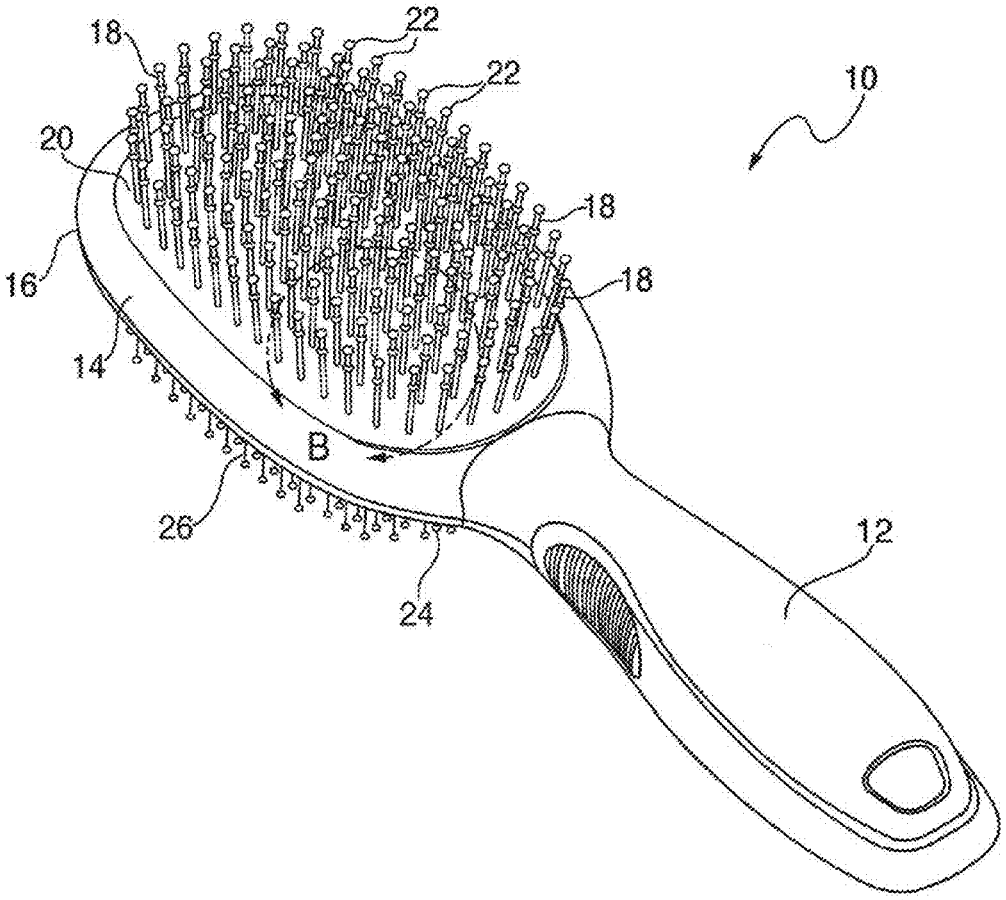
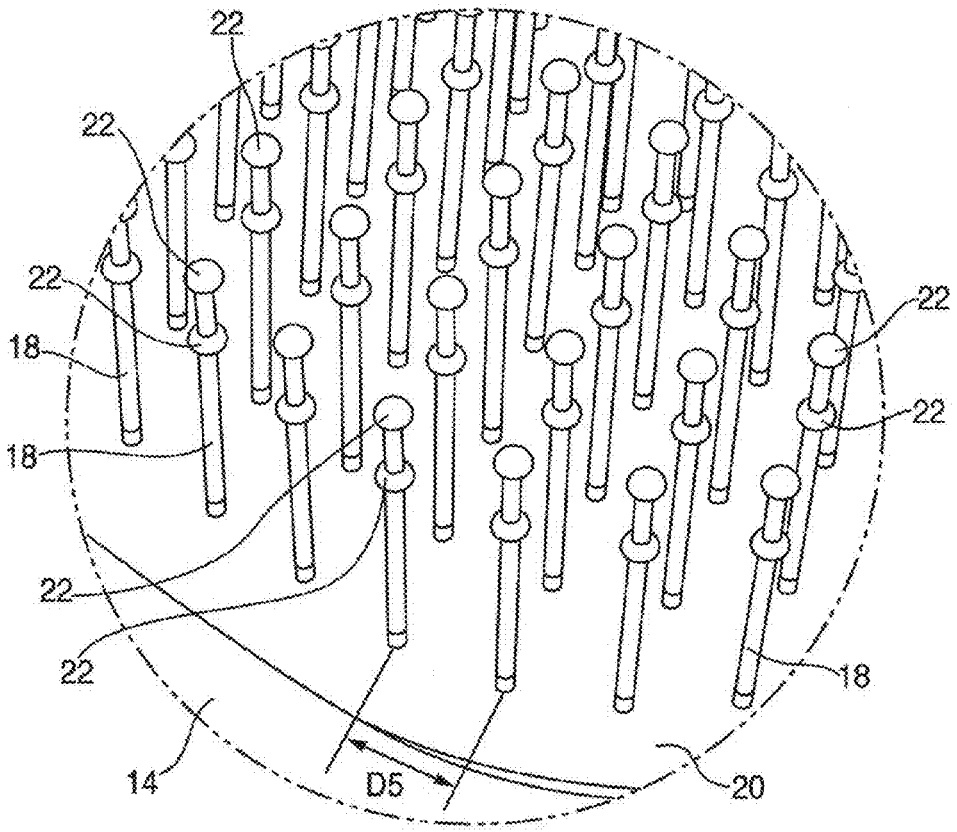


FIG. 7



DETAIL B

FIG. 8

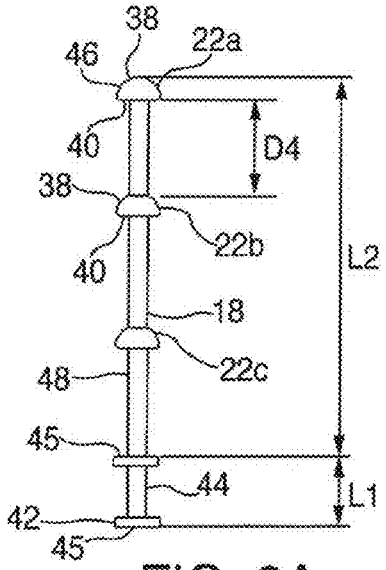


FIG. 8A

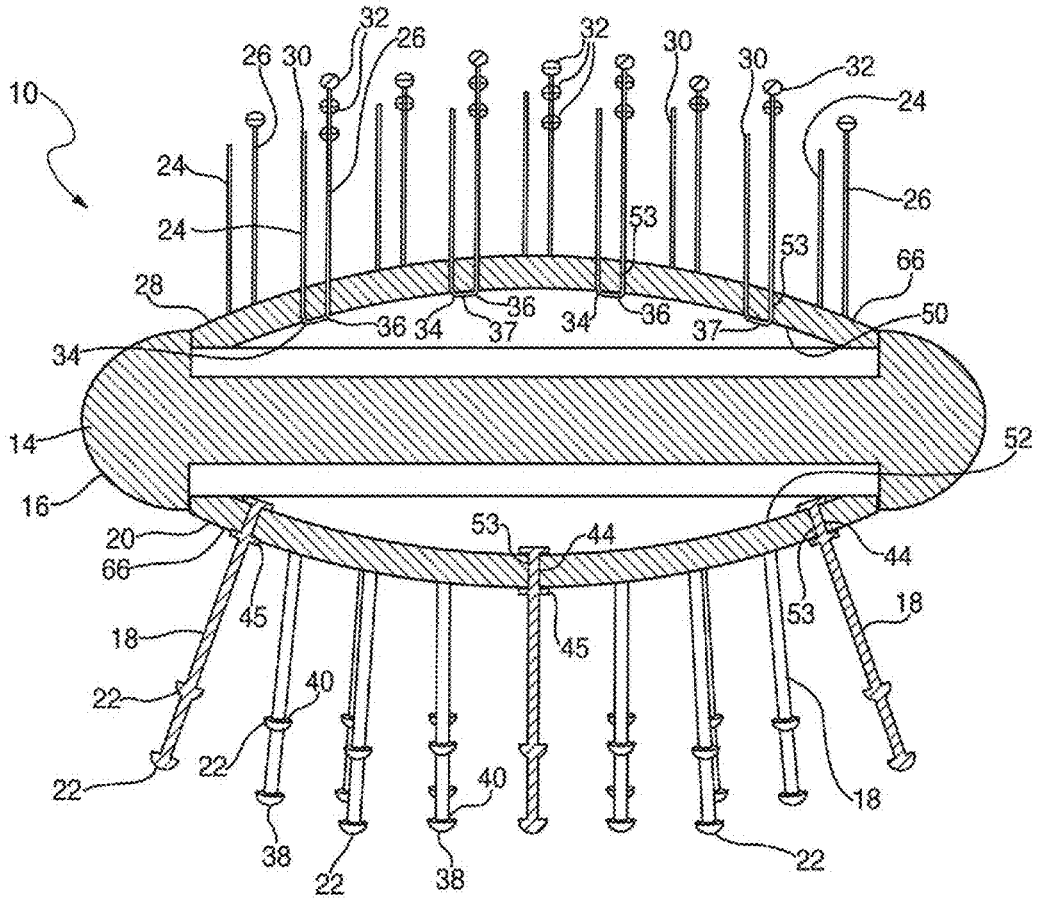

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FIG. 9

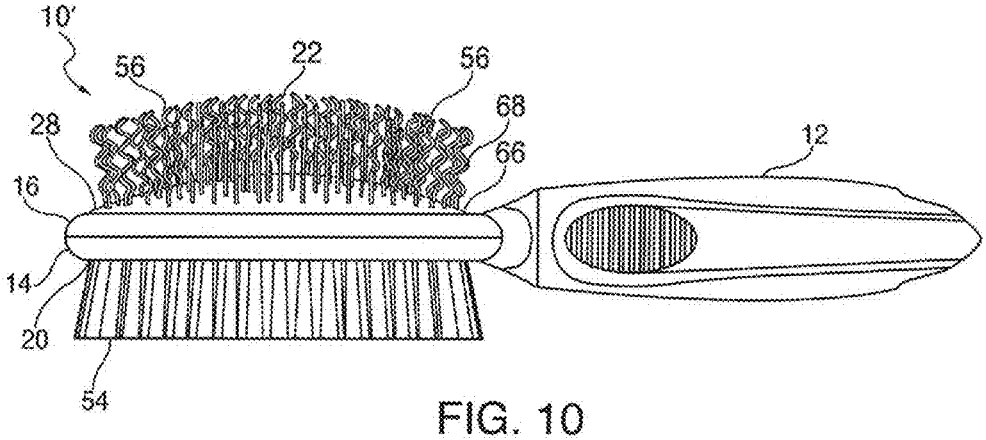

FIG. 10

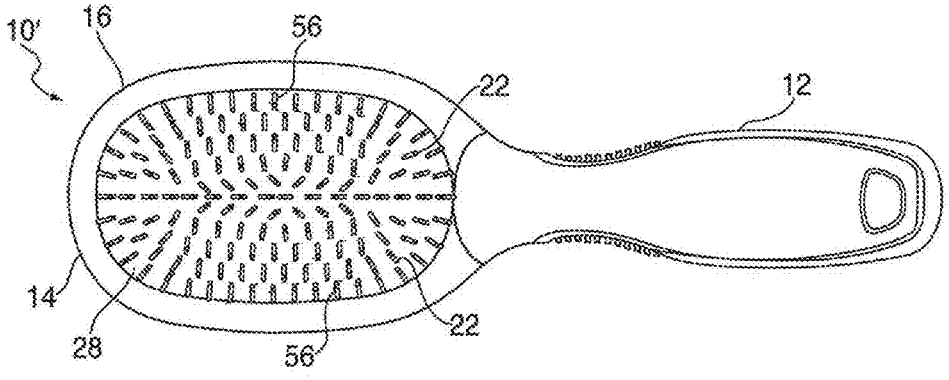

FIG. 11

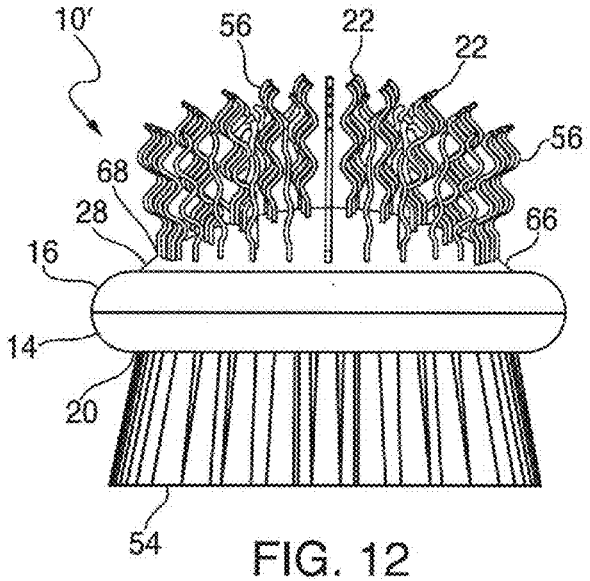
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FIG. 12

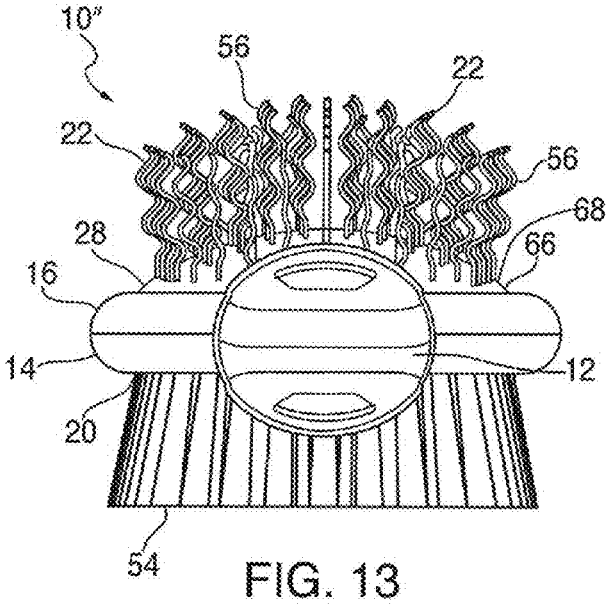
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FIG. 13

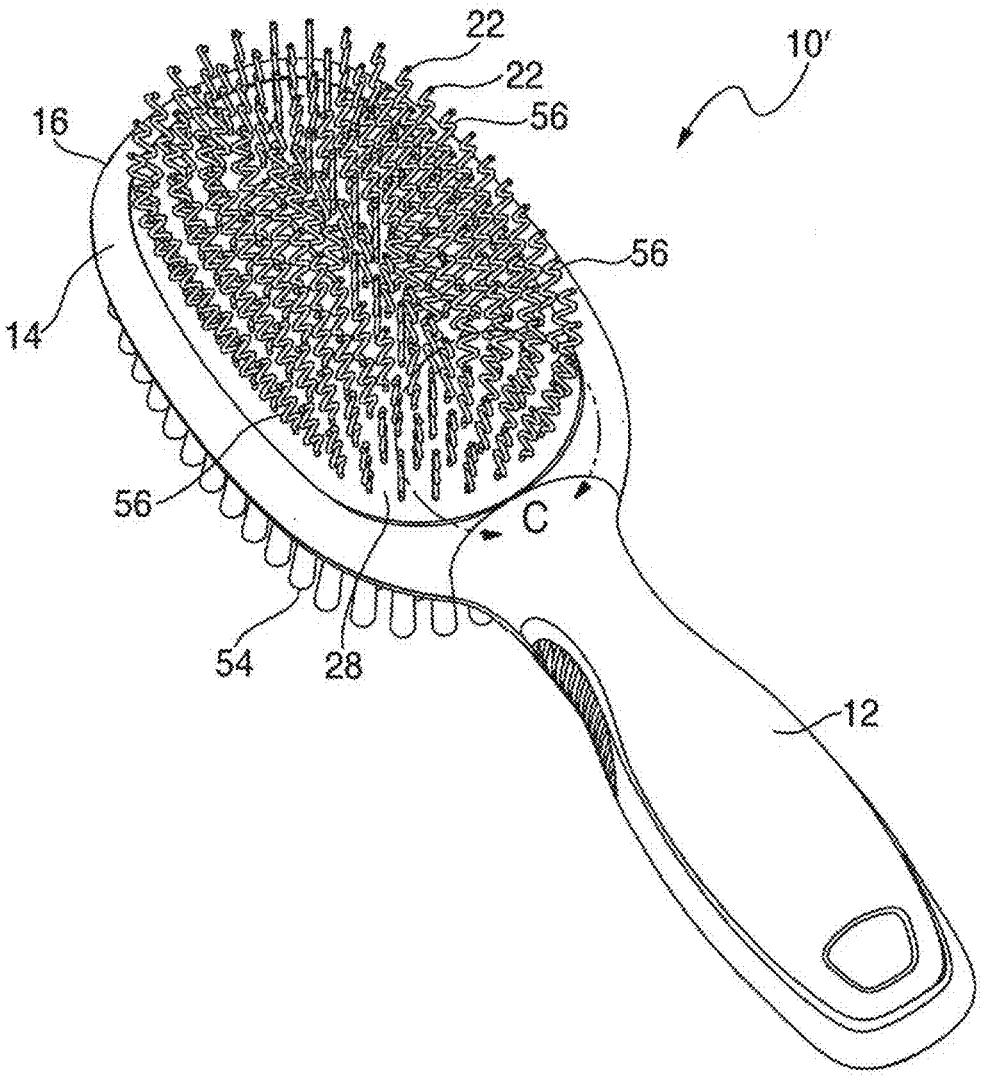

FIG. 14

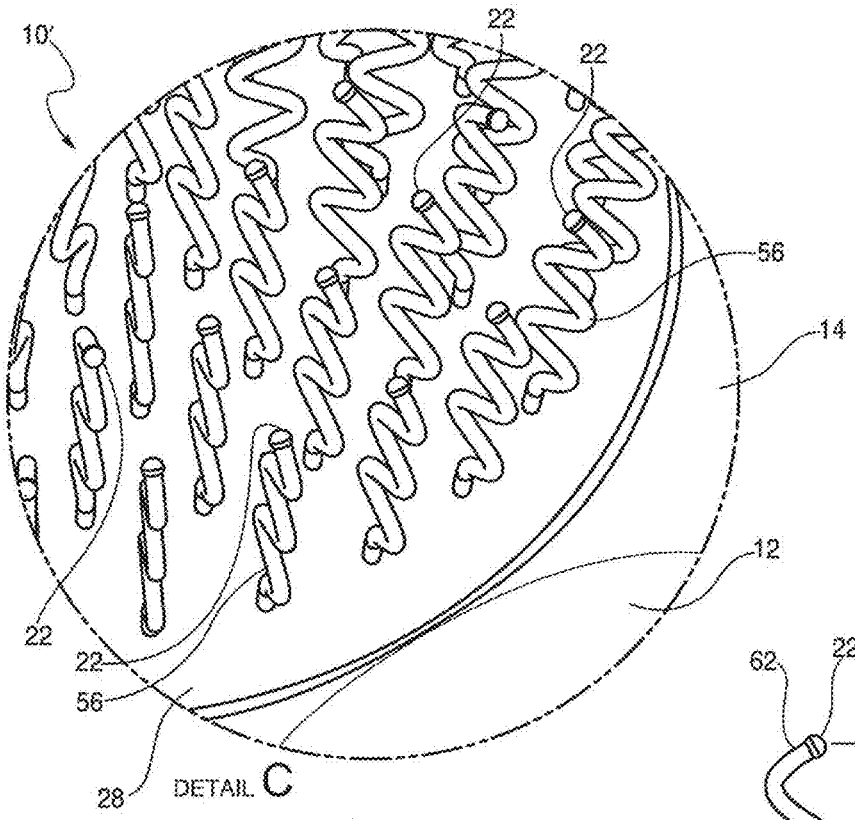

FIG. 15

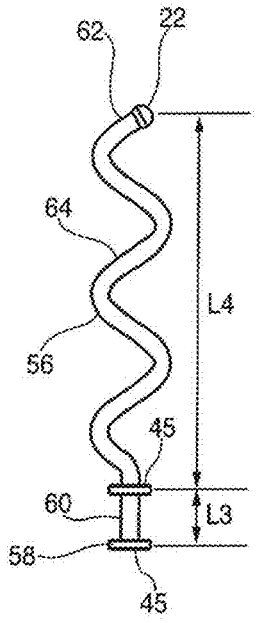

FIG. 15A

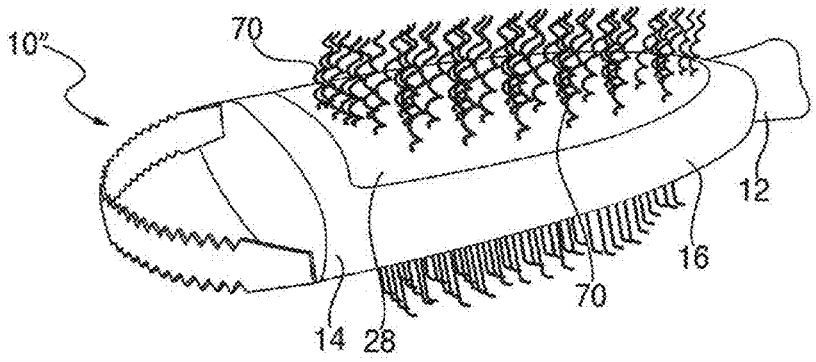

FIG. 16

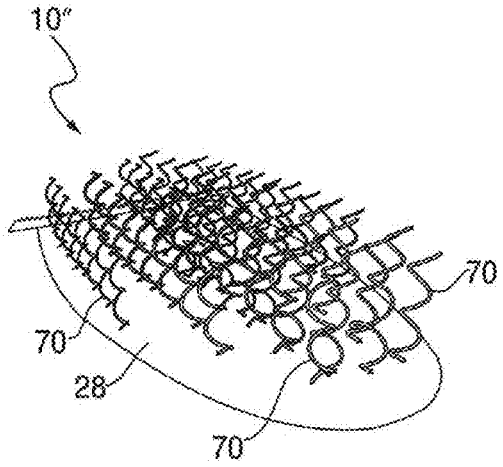

FIG. 17

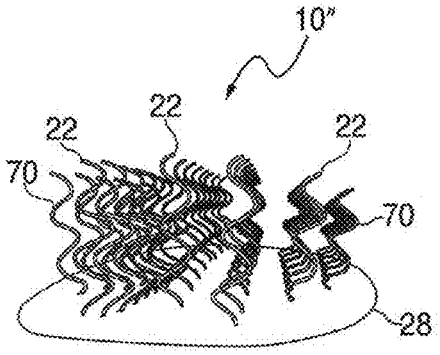

FIG. 18

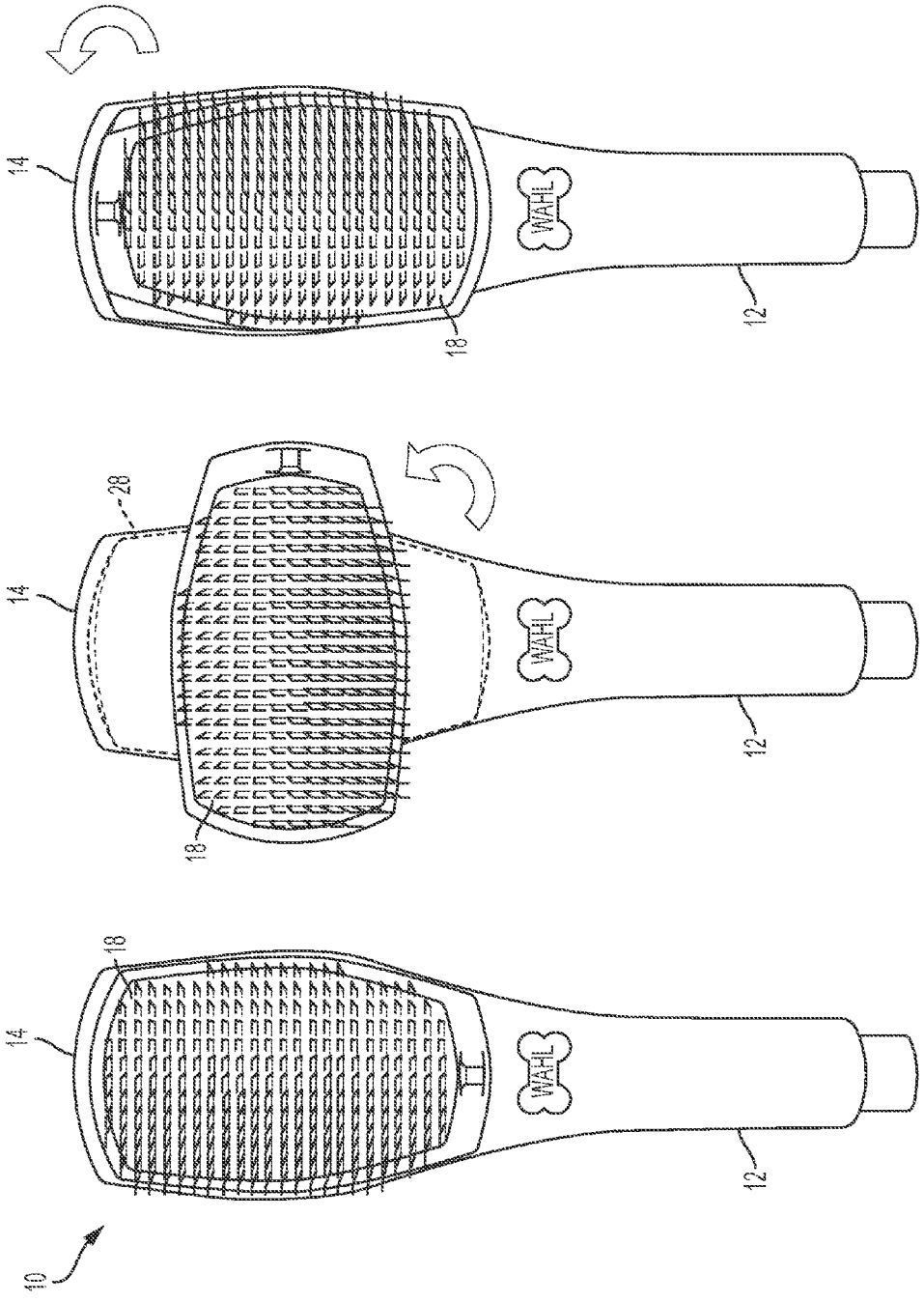

FIG. 19A

FIG. 19B

FIG. 19C

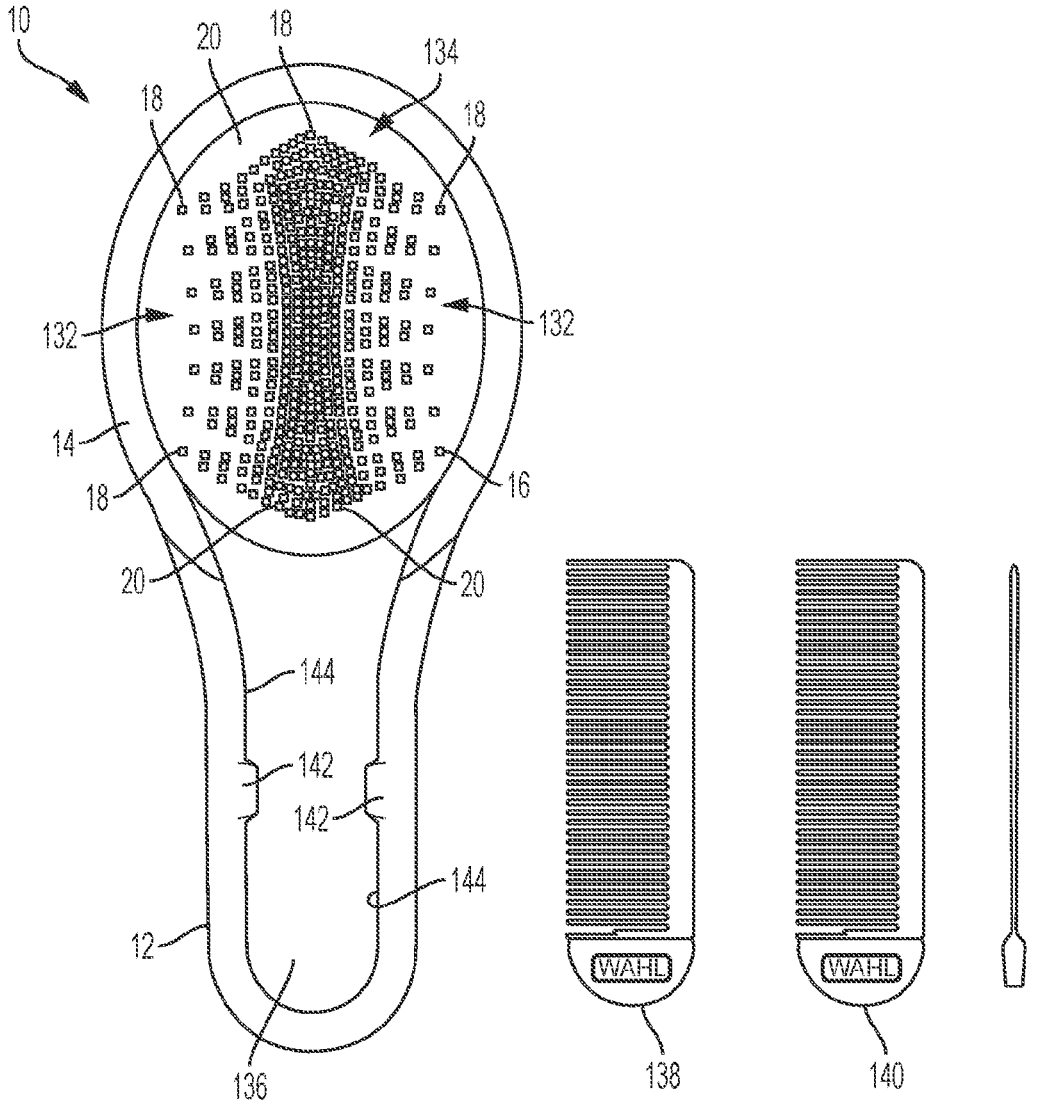
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FIG. 20A

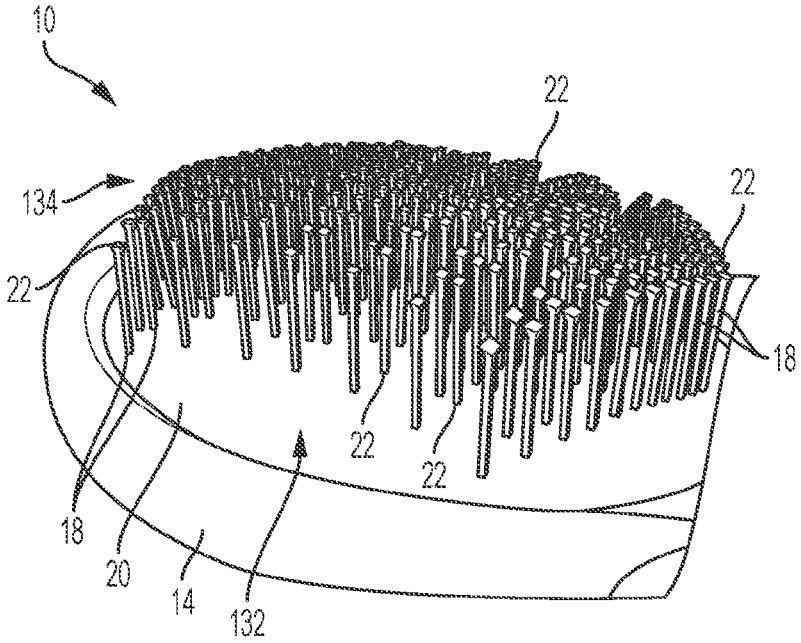

FIG. 20B

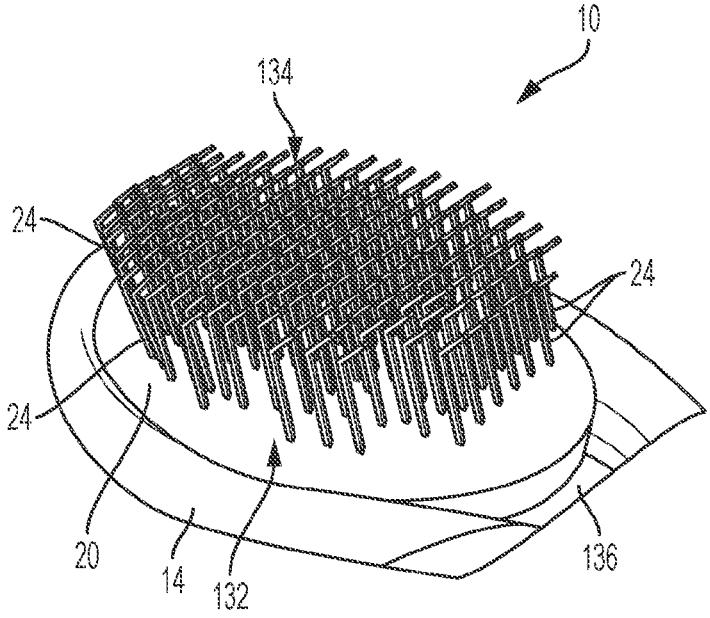

FIG. 20C

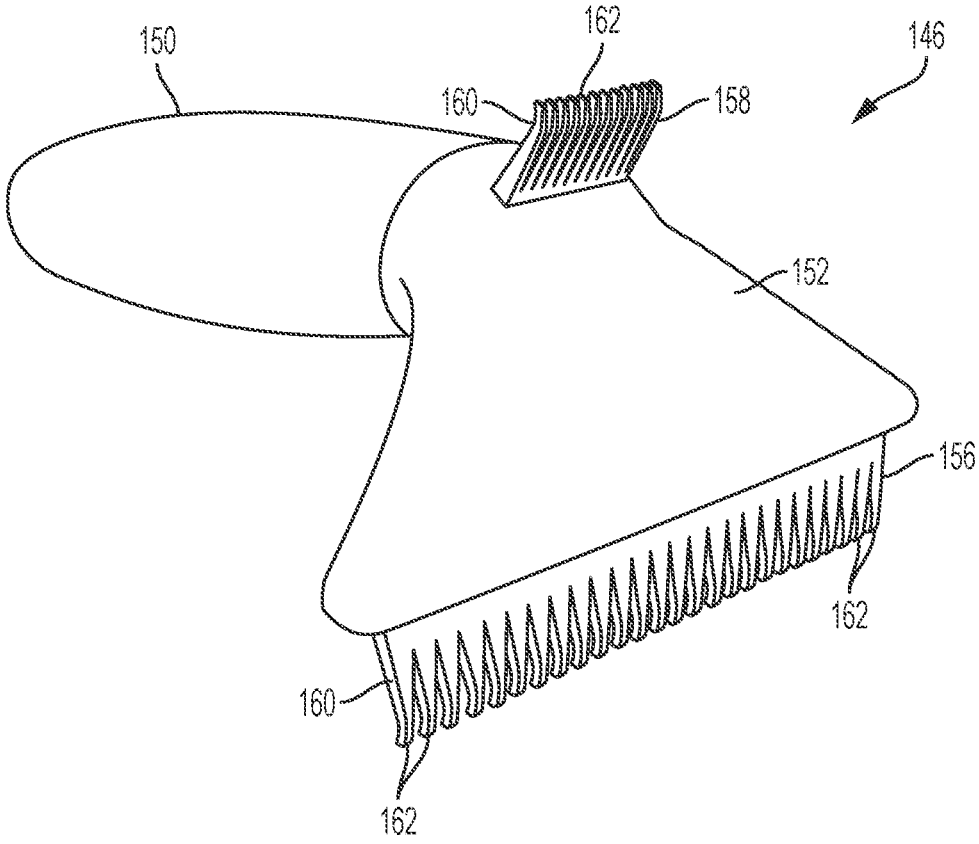

FIG. 21A

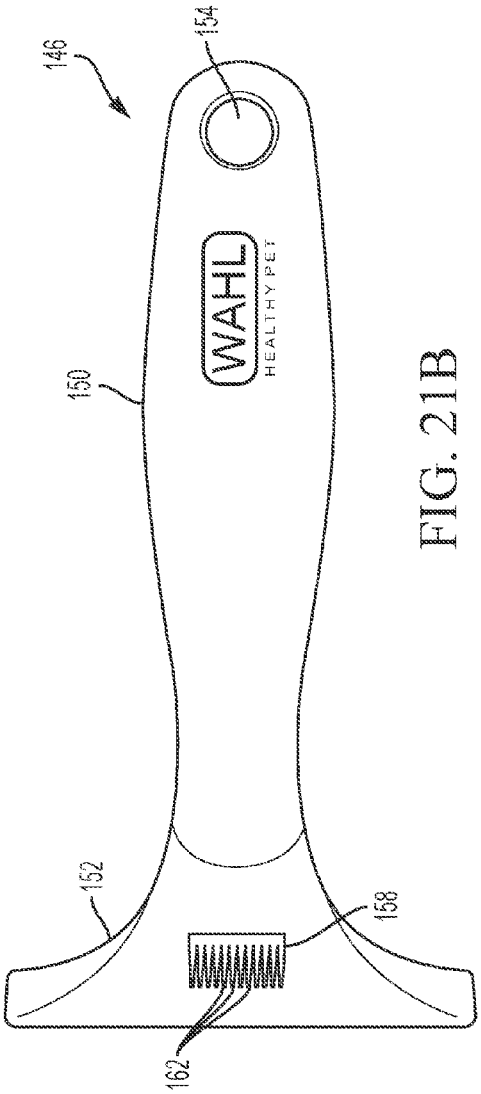

FIG. 21B

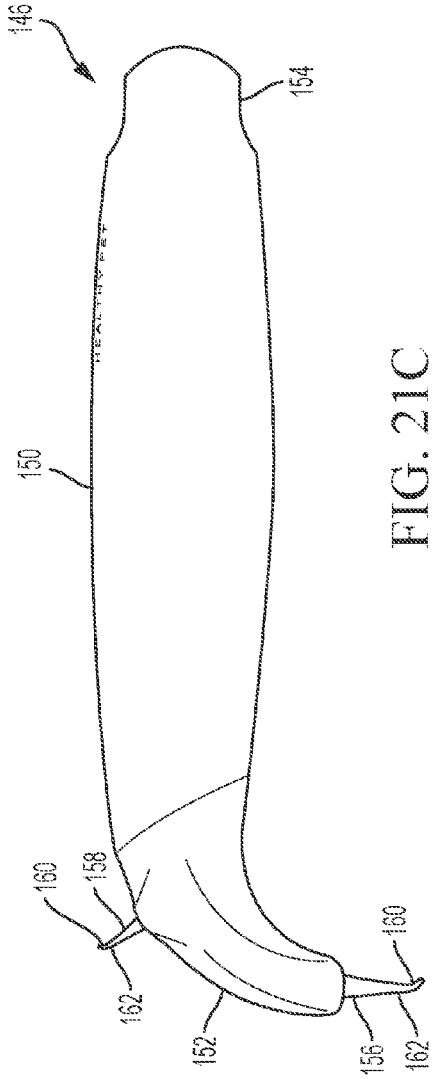

FIG. 21C

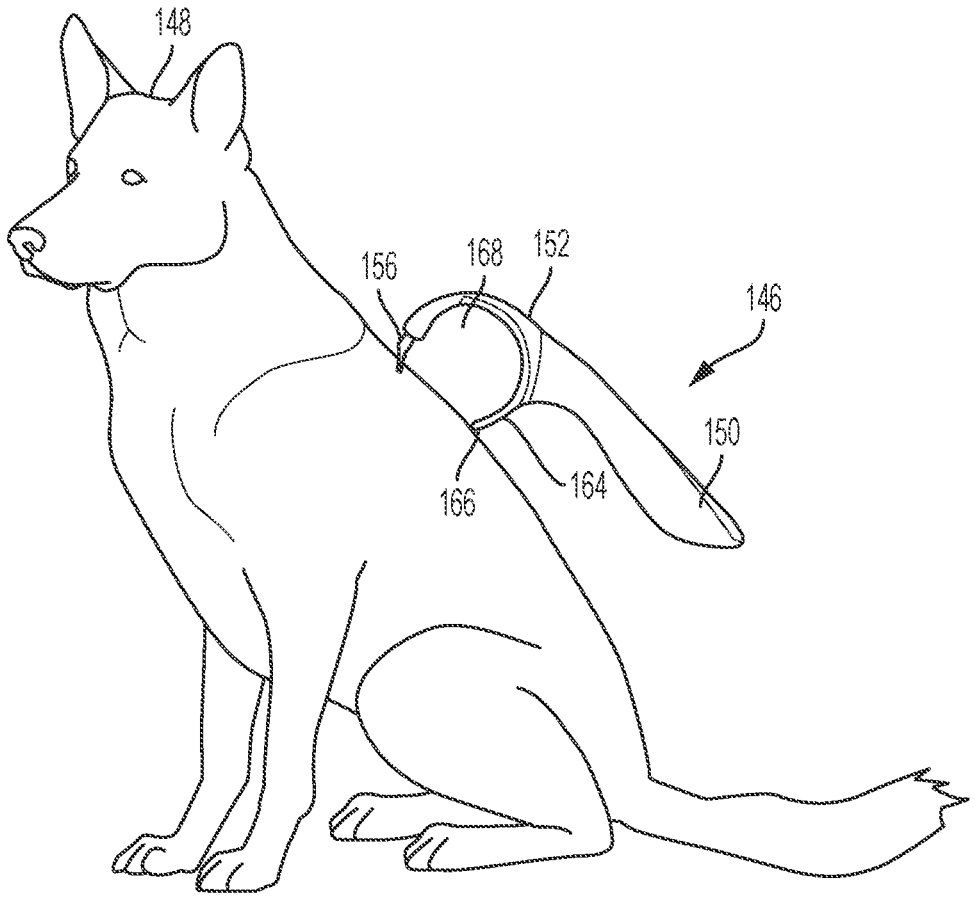

FIG. 21D

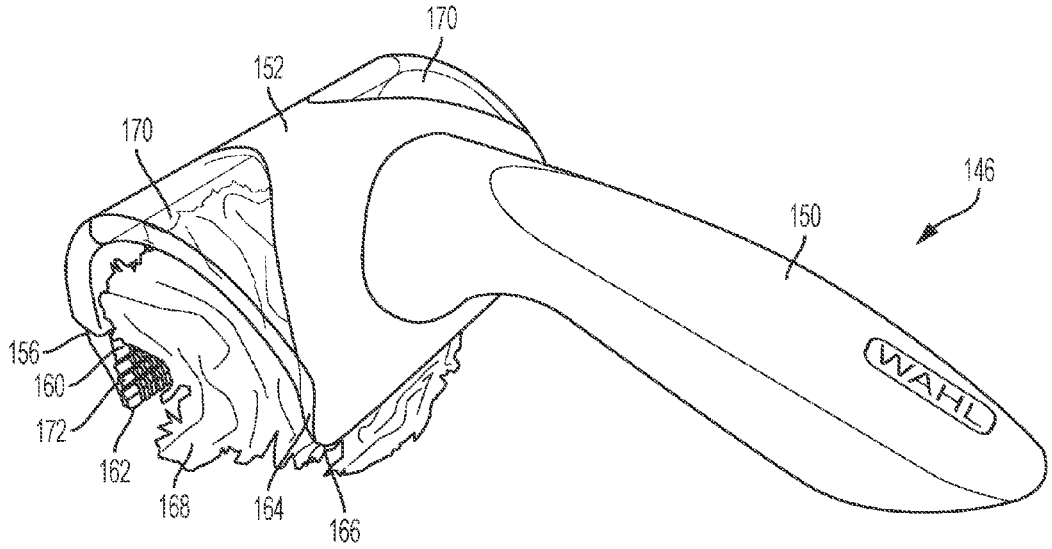

FIG. 21E

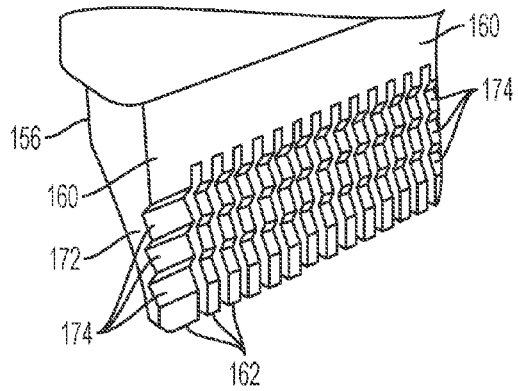

FIG. 21F

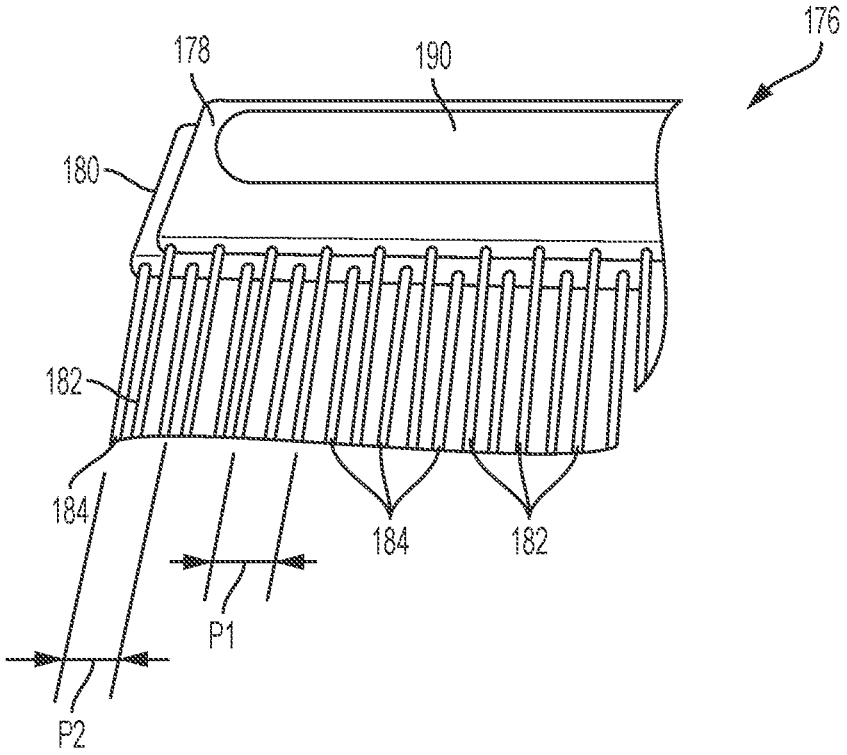

FIG. 22A

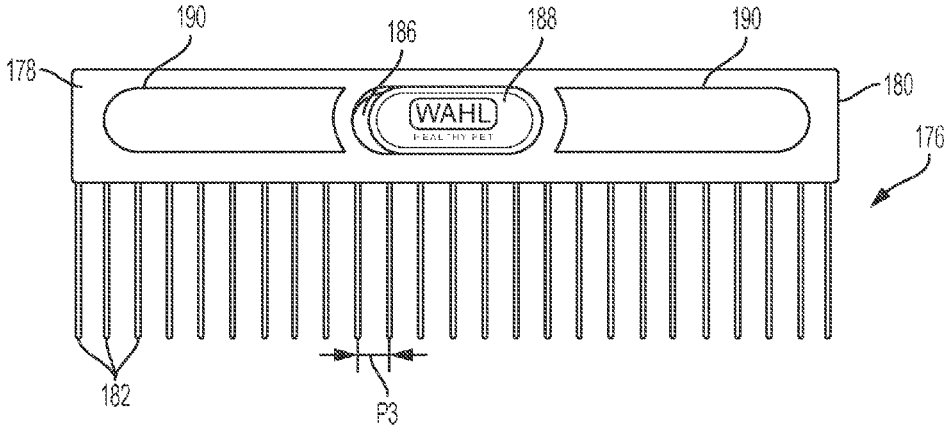

FIG. 22B

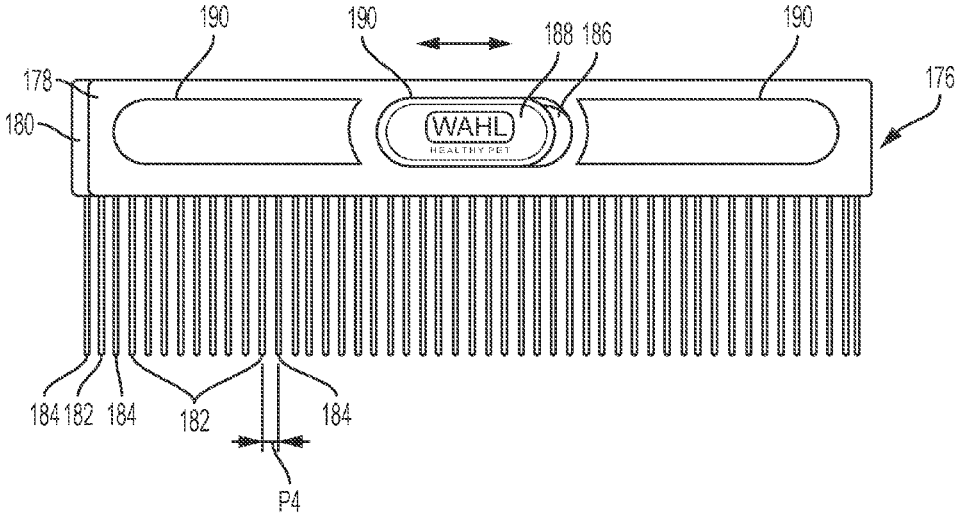

FIG. 22C

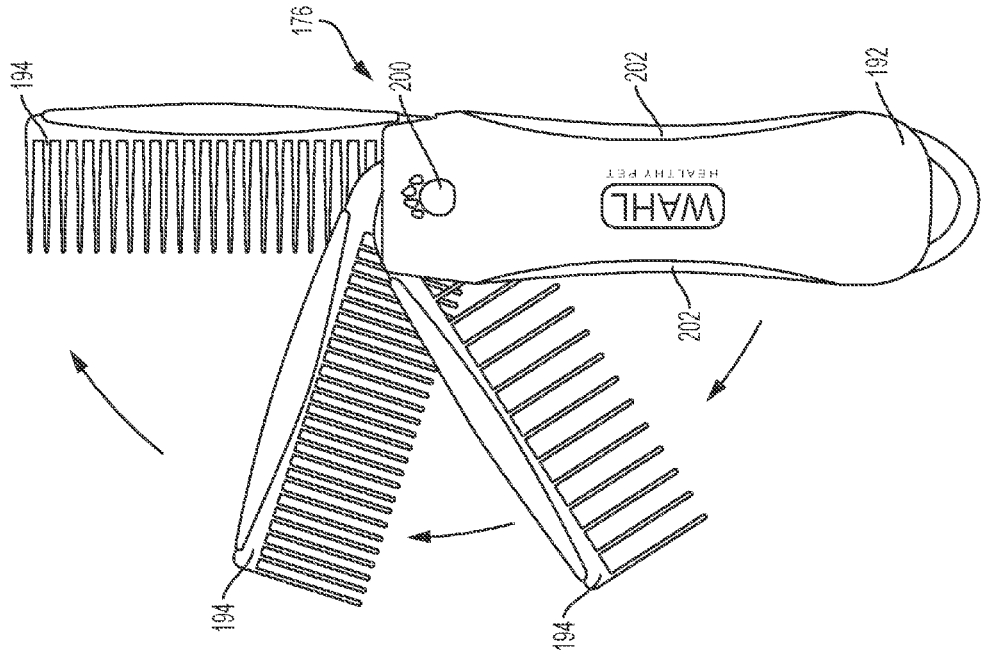

FIG. 23C

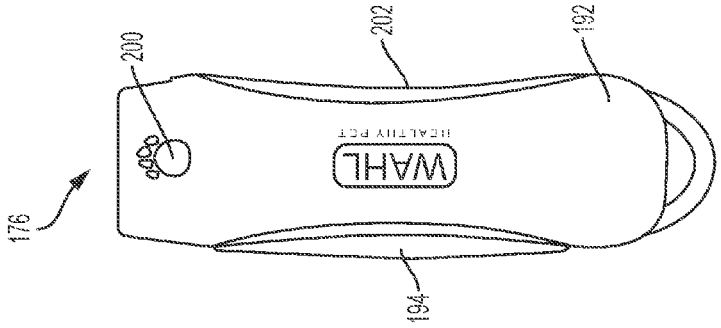

FIG. 23B

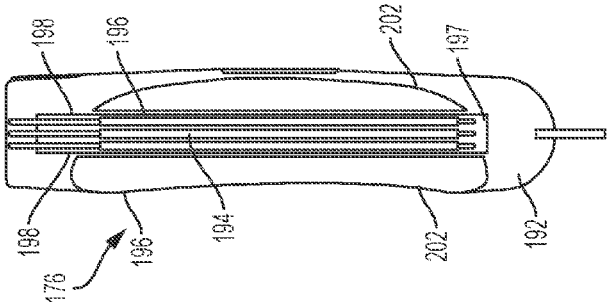

FIG. 23A

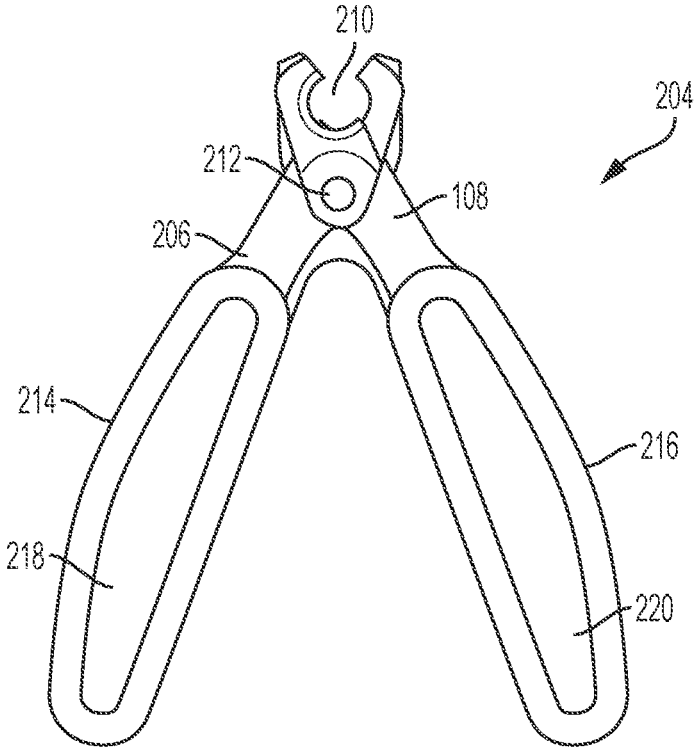

FIG. 24A

FIG. 24B

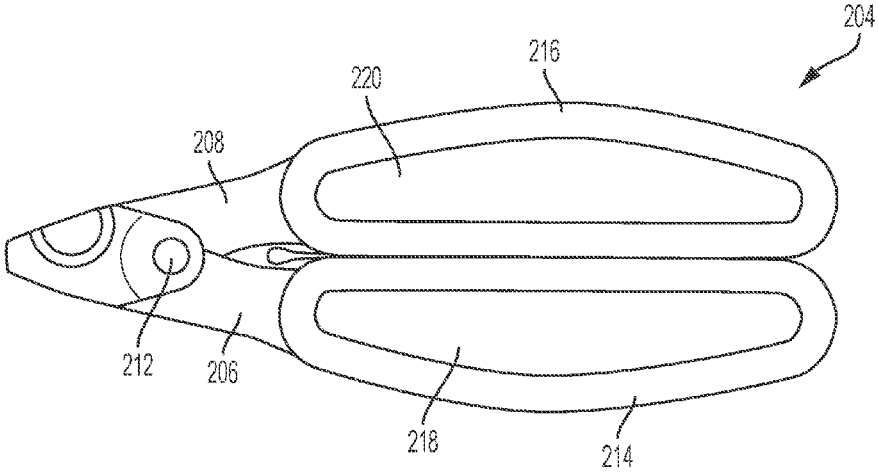

FIG. 24C

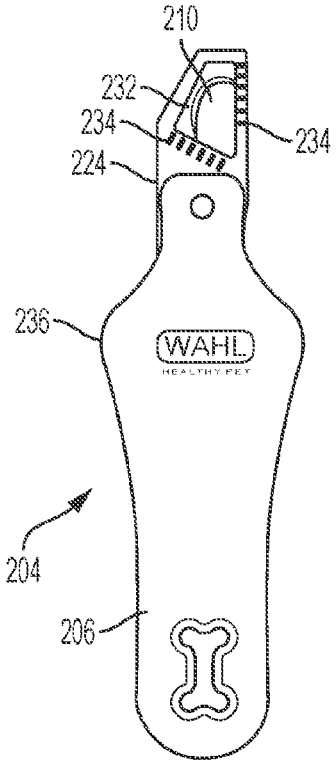

FIG. 25A

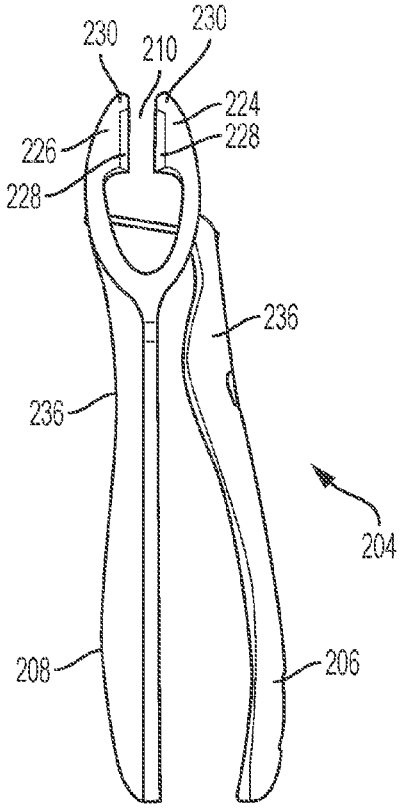

FIG. 25B

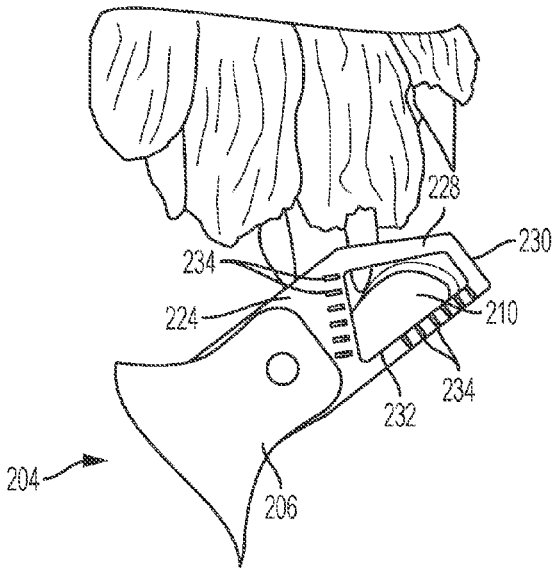

FIG. 25C

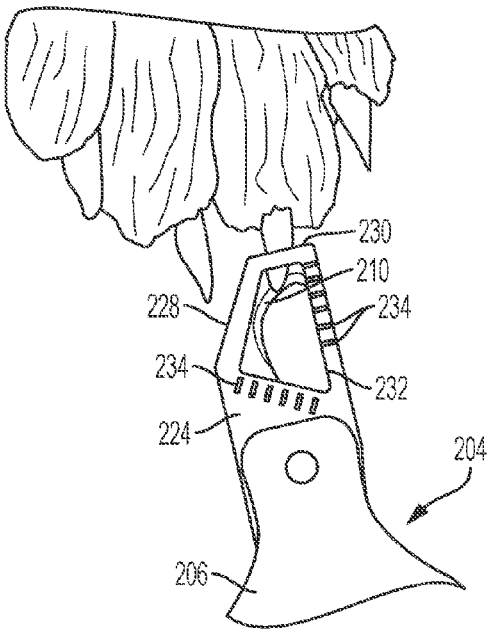

FIG. 25D

MULTI-PURPOSE GROOMING TOOLS

CROSS-REFERENCE

[0001] This application claims priority under 35 US 120 from U.S. patent application Ser. No. 14/516,755 filed Oct. 17, 2014, which claims priority from U.S. Provisional Application Ser. No. 61/893,496, filed Oct. 21, 2013 under 35 U.S.C. §119(e), which is incorporated herein by reference.

BACKGROUND

[0002] The present disclosure generally relates to animal grooming devices, and more particularly relates to a multi-purpose hand-held animal grooming tool configured for various purposes, such as brushing and carding animal hairs coat or fur.

[0003] Infrequent grooming of a domestic animal causes an unwanted accumulation of loose hairs, dander, and surface debris on the animal's skin or in the fur or coat. When these elements are left uncleaned from the animal, homes of animal owners become filled with the loose hairs and other debris, incurring cleaning and maintenance costs for keeping a home free of these elements. An effective solution is to regularly remove the loose hairs and debris from the animal's coat. For example, conventional hand-held grooming tools, such as brushes and combs, remove the loose hairs as the animal approaches a shed cycle, as well as dander and surface debris.

[0004] While conventional tools are functional and partly effective, they present problems for homeowners and professional groomers because each tool serves only one particular purpose at a time, and the homeowners or groomers must resort to other, separate tools for different grooming purposes. Thus, incorporating a grooming device having multiple purposes is needed to save operating time and related costs.

SUMMARY

[0005] The present disclosure is directed to a multi-purpose, hand-held animal grooming tool constructed and arranged for attending various grooming needs. As described in further detail below, the present animal grooming tool includes a combo brush having dual bristle beds on a single body having a handle for gripping. Each bristle bed has specially configured bristles and is designed for serving a different purpose. A first bristle bed has a plurality of multiple head pin bristles designed for removing loose hairs. A second bristle bed has a combination of bristles, a first plurality of rounded-end wire bristles designed for gently stimulating an animal skin, and another plurality of ball end or rounded end bristles designed for removing the loose hairs.

[0006] In one embodiment, a brush configured for removing debris and hairs is provided. Included in the brush are at least one surfaced body having a pad, and a plurality of first bristles extending from the pad. One end of each first bristle is connected to the pad, and an opposite free end of each first bristle has a radially extending head portion. At least one additional head portion is disposed in a spaced relationship along a longitudinal axis of the first bristle.

[0007] In another embodiment, a brush configured for removing debris and hairs is provided. Included in the brush are at least one surfaced body having a pad, and a plurality of first bristles and a plurality of second bristles extending from the pad in an alternating pattern. One end of each first bristle is connected to the pad, and an opposite free end of each first bristle has an angled end. One end of each second bristle is connected to the pad, and an opposite free end of each second bristle has a rounded end.

[0008] In yet another embodiment, a brush configured for removing debris and hairs is provided. Included in the brush are at least one surfaced body having a pad, and a plurality of first bristles extending directly uprightly from the pad. One end of each first bristle is connected to the pad, and an opposite free end of each first bristle is constructed and arranged in a corrugated configuration. Each first bristle has a corrugated shape in a longitudinal direction, and the plurality of first bristles extends substantially vertically from the pad.

[0009] A second embodiment of the present grooming tool includes a carding tool having a large brush and a small brush for carding an animal's fur coat. One aspect of the present tool is that a "C"-shaped support member is provided for resting the tool on the animal's fur coat to protect the skin while carding. Another important aspect is that a viewing window is provided for easy monitoring of an accumulation of collected loose hairs in a tool chamber during operation.

[0010] A third embodiment of the present grooming tool includes a multi-purpose comb performing as two combs that are used respectively for flea removal and untangling. This two-in-one comb is provided for transforming one comb into another based on a specific purpose. Another feature is that multiple combs are folded into a single housing having a cavity configured for accommodating the foldable combs such that each comb is selectively unfolded to suit the situation during grooming.

[0011] A fourth embodiment of the present grooming tool includes a multiple-angle nail cutter or clipper for trimming nails of the animal in at least two different positions. As described in further detail below, the present clipper has two different cutting edges and an associated viewing window so that a user can select a comfortable cutting position while viewing the nail being cut. Another distinguishable feature is that each grooming tool described here employs at least one region covered with a soft-touch resilient material for extra comfort and non-slip grip.

[0012] Grooming tools are provided, including a brush configured for removing debris and hairs, including at least one surfaced body having a first pad, a plurality of first bristles extending from the first pad, one end of each first bristle being connected to the pad, and the bristles being helical in shape. A multi-purpose comb includes a housing having a pair of sidewalls defining a central cavity, and a plurality of foldable combs pivotably mounted at corresponding ends to the housing for insertion into, and withdrawal from the cavity.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. **1** is a front view of the present combo brush, featuring a double-sided body having first bristles arranged on a bottom surface, and second and third bristles arranged on an opposite top surface;

[0014] FIG. **2** is a plan view of the combo brush of FIG. **1**, showing the second and third bristles;

[0015] FIG. **3** is a left side view of the combo brush of FIG. **1**;

[0016] FIG. **4** is a right side view of the combo brush of FIG. **1**;

[0017] FIG. **5** is a top perspective view of the combo brush of FIG. **1**, showing the second and third bristles on the top surface;

[0018] FIG. **6** is a partial, enlarged view of a circled portion A of the combo brush of FIG. **5**;

[0019] FIG. **6**A is an enlarged front elevation view of exemplary second and third bristles of the combo brush of FIG. **6**;

[0020] FIG. **6**B is an enlarged elevation of exemplary second and third bristles of the combo brush of FIG. **6**;

[0021] FIG. **7** is a bottom perspective view of the combo brush of FIG. **1**, showing the first bristles on the bottom surface;

[0022] FIG. **8** is a partial, enlarged view of a circled portion B of the combo brush of FIG. **7**;

[0023] FIG. **8**A is an enlarged front elevation view of an exemplary first bristle of the combo brush of FIG. **8**;

[0024] FIG. **9** is a cross-section of the present combo brush taken along the line **9-9** of FIG. **2** and in the direction generally indicated;

[0025] FIG. **10** is a front view of an alternate embodiment of the present combo brush, featuring a double-sided body having fourth bristles arranged on a bottom surface, and fifth bristles arranged on an opposite top surface;

[0026] FIG. **11** is a plan view of the combo brush of FIG. **10**, showing the fifth bristles;

[0027] FIG. **12** is a left side view of the combo brush of FIG. **10**;

[0028] FIG. **13** is a right side view of the combo brush of FIG. **10**;

[0029] FIG. **14** is a top perspective view of the combo brush of FIG. **10**, showing the fifth bristles on the top surface;

[0030] FIG. **15** is a partial, enlarged view of a circled portion C of the combo brush of FIG. **14**;

[0031] FIG. **15**A is an enlarged front elevation view of an exemplary fifth bristle of the combo brush of FIG. **15**;

[0032] FIGS. **16-18** are elevational views of an alternate embodiment of the present brush showing a plurality of spiral, coil-like bristles projecting from the pad;

[0033] FIGS. **19**A-**19**C illustrate an exemplary rotatable bristle pad that can be employed for the combo brush of FIG. **19**A;

[0034] FIG. **20**A is a plan view of another exemplary embodiment of the combo brush of FIG. **19**A, featuring a bristle pad having a irregularly spaced bristle pattern;

[0035] FIG. **20**B is an enlarged perspective view of the bristle pad of FIG. **20**A having square-shafted bristles;

[0036] FIG. **20**C is an enlarged perspective view of the bristle pad of FIG. **20**A having slicker bristles;

[0037] FIG. **21**A is a perspective view of another embodiment of the present combo brush configured for carding;

[0038] FIG. **21**B is a plan view of the combo carding brush of FIG. **21**A;

[0039] FIG. **21**C is a side view of the combo carding brush of FIG. **21**A;

[0040] FIG. **21**D-**21**E illustrate another exemplary embodiment of the combo carding brush of FIG. **21**A, featuring a "C"-shaped support member and a viewing window;

[0041] FIG. **21**F is an enlarged perspective view of the combo carding brush of FIG. **21**A, featuring a comb having stepped or grooved teeth;

[0042] FIG. **22**A is an enlarged perspective view of the present multi-purpose comb, featuring a pair of slidably connected bars;

[0043] FIG. **22**B is a front elevation view of the multi-purpose comb of FIG. **22**A in a first position;

[0044] FIG. **22**C is a front elevation view of the multi-purpose comb of FIG. **22**A in a second position;

[0045] FIGS. **23**A-**23**C illustrate another exemplary multi-purpose comb having a housing configured for accommodating a plurality of foldable combs;

[0046] FIG. **24**A is a plan view of the present nail clipper in an open position;

[0047] FIG. **24**B is a side view of the nail clipper of FIG. **24**A;

[0048] FIG. **24**C is a plan view of the nail clipper of FIG. **24**A in a closed position;

[0049] FIG. **25**A is a plan view of another embodiment of the nail clipper of FIG. **24**A, featuring a viewing window and two sets of cutting edges;

[0050] FIG. **25**B is a side view of the nail clipper of FIG. **25**A; and

[0051] FIGS. **25**C-**25**D illustrate different clipping methods of the nail clipper of FIG. **25**A based on a user's cutting position or preference.

DETAILED DESCRIPTION

[0052] Referring now to FIGS. **1-4**, an exemplary pet or animal combo brush is generally designated **10**, and is designed to remove debris while pulling out dead hairs and also gently stimulating a skin of an animal underneath the hairs. Included in the combo brush **10** are an elongated handle **12** and a generally oval-shaped double-sided or double working surfaced body **14**. Preferably, the body **14** has a radiused circumferential edge **16**. A plurality of first bristles **18** extends directly uprightly from a first pad or working surface **20** of the body **14**. One end of each first bristle **18** is connected to the first pad **20**, and an opposite free end has a radially extending head portion **22**.

[0053] One aspect of the present brush **10** is that a plurality of second bristles **24** and a plurality of third bristles **26** extend directly uprightly from a second pad or working surface **28** of the body **14** in an alternating pattern. Although other arrangements are contemplated, one exemplary pattern is to arrange the second and third bristles **24**, **26** in alternating rows extending transverse to the longitudinal axis of the body **14**. One end of each second bristle **24** is connected to the second pad **28**, and an opposite free end has an angled end **30**, preferably right angled (i.e., "L"-shaped), but other orientations are contemplated. While the first pad **20** is located on a bottom of the brush **10** and the second surface or pad **28** is on the top of the brush, it is contemplated that the positions may be reversed.

[0054] Referring now to FIGS. **1** and **5-6**, groups of various nonlinear angles are contemplated for the angled ends **30** of the second bristles **24**, such as 30°, 45°, and 90° angled ends, but other suitable obtuse or acute angled ends are also contemplated to suit different applications. In practice, acute angled (less than 90°) ends may be suitable for animals coated with a relatively thin layer of hairs or lower hair density, but obtuse angled (between 90° and 180°) ends may be suitable for animals coated with a thick layer of

hairs, or greater hair density. As described in greater detail below, regardless of the hair type of the animal, this configuration of the second and third bristles **24**, **26** prevents harmful skin damage caused by the sharp, angled end **30** of the second bristle **24** while accomplishing desired grooming purposes.

[0055] It is contemplated that one end of each third bristle **26** is connected to the second pad **28**, and an opposite free end has a rounded or looped shape **32**. It is preferred that each rounded end **32** is made of or encased by soft materials, such as rubber, bio-plastic, and silicone materials, but other suitable metallic materials, such as stainless, are also contemplated. Alternatively, each end **32** forms an opened loop as an extension of the third bristle **26**. An exemplary outer diameter of each end **32** is approximately 1 millimeter or 0.012 inch. Although the rounded or looped ends **32** are shown, other suitable geometric shapes are also contemplated. In a preferred embodiment, the third bristle **26** has a dimension in a longitudinal direction that is longer than the similar dimension of the second bristle **24**. Having the rounded ends **32** allows a gentle contact with the animal's skin while grooming. This gentle contact stimulates the animal's skin, and promotes generation of skin oil for rejuvenating healthy skin and hair.

[0056] Referring now to FIGS. **6** and **6**A, because the third bristle **26** with the rounded end **32** is taller than the second bristle **24** by a predetermined distance D**1**, the third bristle **26** contacts the animal's skin before the second bristle **24**, thereby reducing a direct skin contact with the sharp, angled end **30** of the second bristle **24**. As illustrated in FIGS. **6**A-**6**B, the distance D**1** creates or forms a buffer zone between the animal's skin and the sharp, angled end **30** of the second bristle **24**. An exemplary distance D**1** (FIG. **6**A) defined by an outermost end of the second bristle **24** and the outermost end of the third bristle **26** preferably ranges between 1/16 and ¼ inch, however this dimension may vary to suit the application.

[0057] Further, the second and third bristles **24**, **26** in alternating rows are arranged in a spaced relationship with respect to each other, providing a predetermined distance or width between adjacent bristles. An exemplary distance or width D**2** (FIG. **6**) defined by space between longitudinal axes of the second and third bristles **24**, **26** preferably ranges between 0.067 and 0.197 inches. Another predetermined distance or width D**3** (FIG. **6**) defined by space between two adjacent second bristles **24** (or third bristles **26**) preferably ranges between 0.197 and 0.250 inches. These dimensions may vary to suit the application. As a result of this configuration having three different distances D**1**, D**2**, D**3**, the rounded ends **32** of the third bristles **26** operate as a guard or protector for preventing the angled ends **30** of the second bristles **24** from damaging the animal's skin.

[0058] Referring now to FIGS. **1** and **6**A-**6**B, another important aspect of the present brush **10** is that the second bristles **24** and the third bristles **26** are attached together at their corresponding lower ends **34**, **36** by a bridge **37** located opposite from the free ends of the second and third bristles, forming a "U"-shaped pin. The combined bristles **24**, **26** are mounted on, and extend uprightly from, the second pad **28** of the body **14**. More specifically, the bridge **37** is maintained on an inside of the pad **28**, and the bristles **24**, **26** project through corresponding holes in the pad. Attachment of the "U"-shaped pin to the second pad **28** of the body **14** is described in greater detail below in FIG. **9**.

[0059] Referring now to FIGS. **7**, **8** and **8**A, at least one additional head portion **22** is disposed in a spaced relationship along a longitudinal axis of the first bristle **18** in addition to the head portion disposed on the free end of the first bristle. Although only two head portions **22** are disposed on each first bristle **18** (FIG. **8**), any number of head portions is contemplated to suit the application. It is preferred that the head portion **22** has a dome-shaped upper region **38** and a flattened lower region **40** (FIG. **8**A), but other configurations, such as a round, square, triangle, and other suitable geometric shapes, are also contemplated. As such, this dome shape design of the first bristle **18** provides a gentle stimulation of the animal's skin and an even distribution of natural skin oil throughout an animal's fur or coat as a result of stroking the brush **10** through the animal's fur or coat. As illustrated in FIG. **8**A, it is preferred that a lower end **42** of the first bristle **18** includes a securing member **44** having a first predetermined length L**1**. Included on the securing member **44** is a pair of longitudinally or axially spaced disk formations **45** that sandwich the pad **20** between them to hold the bristle in place as the bristle **18** projects through an opening in the base. An opposite upper end **46** of the first bristle includes a linear section **48** having a second predetermined length L**2**.

[0060] In one embodiment, best seen in FIG. **8**A, the head portions **22** of each first bristle **18** are variably spaced apart along the longitudinal axis of the corresponding first bristle at different heights. Thus, an axial spacing between first two head portions **22***a* and **22***b* is different from the axial spacing between head portions **22***b* and **22***c*. Similarly, the adjacent first bristles **18** are spaced in a variable distance or width relationship with respect to each other. As a result, the first bristles **18** having variably positioned head portions **22** and/or differently spaced adjacent bristles increase a surface contact area and a number of associated edges. This arrangement creates more than one layer of hair removal, and removes more loose hairs than a conventional brush.

[0061] While the head portions **22** having the identical shape are shown in FIGS. **8** and **8**A, it is contemplated that each head portion **22** has a different shape to suit the application. As discussed above, a suitable number of the head portions **22** is determined based on a hair length of the animal. For example, the longer the hair of the animal, the more the head portions **22** are added on the first bristle **18**. An angular orientation and spacing of the head portions **22** are variable to suit different applications. It is also contemplated that a distance or width D**4** (FIG. **8**A) defined by space between adjacent head portions **22** on each first bristle **18** varies depending on different applications. Another predetermined distance or width D**5** (FIG. **8**) defined by space between two adjacent first bristles **18** preferably ranges between 0.197 and 0.250 inches. These distances are contemplated as varying to suit the application.

[0062] Referring now to FIG. **9**, each "U"-shaped pin having one second bristle **24** and one third bristle **26** is arranged in the second pad **28**, and the lower ends **34**, **36** of the second and third bristles **24**, **26** are attached to an interior surface **50** of the second pad using an adhesive, a tape, or a mesh-type attachment device, as known in the art. Also, each first bristle **18** is arranged in the first pad **20**, and the securing member **44** of the first bristle **18** is attached to an interior surface **52** of the first pad in a similar manner described above. As is known in the art, the bristles **18**, **26** project through openings **53** in the pads **20**, **28**. Also, as seen in FIG.

9, the pads **20**, **28** are secured to the body **14** of the brush **10** using adhesive, ultrasonic molding, insert molding, or other conventional fabrication technique.

[0063] Referring now to FIGS. **10-13**, in another embodiment, generally designated **10'**, is depicted. Components shared with the brush **10** are designated with identical reference numbers. In this embodiment, it is contemplated that the first pad **20** optionally has a plurality of bundles of fourth bristles **54** having the shape of straight wires or other filaments, and the second pad **28** has a plurality of fifth bristles **56** constructed and arranged in a corrugated, or zig-zag configuration. As an example, each fourth bristle **54** is made of a bundle of straight wires configured for brushing or styling the animal's hairs, and cleaning or scraping solids from the animal's hairs. Each fifth bristle **56** has a corrugated shape in a longitudinal direction, directly and substantially vertically extending from the second pad **28**. This corrugated design of the fifth bristle **56** allows more efficient capturing and collection of loose hairs per stroke than the conventional brush with a straight pin bristle. One end **58** of each fifth bristle **56** is connected to the second pad **28**, and an opposite free end optionally has the radially extending head portion **22**.

[0064] Referring now to FIGS. **12** and **13**, when the brush **10'** is viewed from the sides, or from the front and rear (FIG. **10**), in a preferred embodiment, it is contemplated that the plurality of fifth bristles **56** define the appearance of an interlocking, three-dimensional braided structure on the second pad **28**. A spacing pattern between adjacent fifth bristles **56** is variable to suit the application. For example, as illustrated in FIG. **15**, the adjacent fifth bristles **56** are positioned so that the pointed "zig-zag" potions in an overlapping (or alternatively non-overlapping) relationship depending on the hair type of the animal. The overlapping relationship between the fifth bristles **56** is achieved by adjusting the distance between the adjacent fifth bristles relative to each other, such that at least one corrugated portion of a first fifth bristle overlaps with at least one corrugated portion of a second adjacent fifth bristle. As a result, the closer the fifth bristles **56** are, the more surface contact the fifth bristles provide during grooming.

[0065] Referring now to FIGS. **15** and **15**A, an enlarged view of the fifth bristle **56** is shown. In a preferred embodiment, as is the case with the first bristle **18** shown in FIG. **8**A, the lower end **58** of the fifth bristle **56** includes a securing member **60** having a third predetermined length L**3**, and an opposite upper end **62** of the fifth bristle includes a non-linear section **64** having a fourth predetermined length L**4**. As described above, the lower end **58** is connected to the second pad **28** using the disks **45**, and the opposite upper end **62** optionally has the radially extending head portion **22**. An angular orientation and spacing of the non-linear section **64** of the fifth bristle **56** is variable to suit different applications. Attachment of the fifth bristles **56** to the second pad **28** is achieved in a similar manner described above regarding the first bristles **18** shown in FIG. **9**.

[0066] Referring now to FIGS. **16-18**, another embodiment of the present brush is generally designated **10"**. Components shared with the brushes **10** and **10'** are designated with identical reference numbers. A main distinction of the brush **10"** is that the bristles **70** are helical, spiral or coil-like in configuration. The bristles are contemplated as being made of stainless steel, other metal or a suitable plastic. As is the case with the bristles **56**, the free ends are optionally provided with enlarged head portion **22**, or are alternately pointed (FIG. **17**). Also, the bristles **70** are held to the corresponding pad **28** using disks **45** as seen in FIG. **15**A).

[0067] Referring now to FIGS. **16-18**, it is contemplated that the pad **28** has a plurality of fourth bristles **70** constructed and arranged in a spiral, coil-like configuration. As an example, the fourth bristle **70** has a corkscrew or spiral shape in a longitudinal direction, directly extending from the pad **28**. This spiral design allows more efficient capturing and collection of loose hairs per stroke than the conventional brush with a straight pin bristle. One end of each fourth bristle **70** is connected to the pad **28**, and an opposite free end optionally has the radially extending head portion **22**.

[0068] Returning now to FIGS. **1**, **3**, **4**, **10**, **12**, and **13**, although the double-head combo brush **10** is shown for illustration purposes, a single-head brush is also contemplated, featuring different combination of the first, second, third, fourth, and fifth bristles **18**, **24**, **26**, **54**, **56** to suit the application. Also, while specific combinations of bristles **18**, **24**, **26**, **54**, **56** are shown on each pad **20**, **28** of the combo brush **10**, other suitable combinations of the bristles **18**, **24**, **26**, **54**, **56** are also contemplated on each pad depending on different applications.

[0069] It is preferred that at least one of the first and second pads **20**, **28** has a rounded, arched or curved outer surface **66**. As a result, the rounded outer surface **66** of the pad **20**, **28** has a convex-arc shape protruding from the body **14**, so that the bristles **18**, **24**, **26**, **54**, **56** attached to the corresponding pad extend outwardly in a flared manner. Although the body **14**, and the first and second pads **20**, **28** are shown as separate parts, it is contemplated that the body and pads are integrally formed as a single unit. For example, the first and second pads **20**, **28** are injection molded, such that the body **14** is integrally embedded within the pads. Other suitable injection or insert molding processes are also contemplated.

[0070] Referring now to FIGS. **19**A-**19**C, it is also contemplated that at least one of the first and second pads **20**, **28** is rotatably attached to the body **14**. For example, the first or second pad **20**, **28** having one or more of the bristles **18**, **24**, **26**, **30** is rotatable approximately 90, 180, 270, 360 degrees clockwise or counterclockwise relative to a longitudinal axis of the body **14**. Each stepped rotation of the pad **20**, **28** facilitates various differently-angled positions of the first or second pads **20**, **28** to suit the situation, e.g., based on a condition of the fur of the animal.

[0071] Referring now to FIGS. **20**A-**20**C, in yet another embodiment, it is contemplated that the first bristles **18** are arranged to be irregularly spaced further apart on two opposite longitudinal sides, generally designated **132**, generally parallel to the longitudinal axis of the body **14** than a middle or center region **134** of the first pad **20**. As an example, the radially extending head portion **22** of the first bristle **18** has a tapered square shape for enhancing collection of the loose hairs by spacing out the first bristles **18** on the sides **132**. Also, these bristles **18** preferably have a square-shaft when viewed in horizontal cross-section. In this arrangement, the first bristles **18** are disposed more densely in the middle or center region **134** than on the sides **132**, thereby enhancing a stroke resistance force for collecting maximum amount of loose hairs. Although the arrangement of the first bristles **18** is shown in FIG. **20**A for illustration purposes, it is also contemplated that other second, third or

fourth bristles **24**, **26**, **130** or a combination of bristles can be arranged in a similar manner.

[0072] Referring again to FIG. **20**A, optionally, the handle **12** has an opening, cavity, or slot **136** for releasably storing at least one comb, such as a flea comb **138** or a finish comb **140**, using a set of locks **142** disposed on opposite inner surfaces **144** of the handle. Another optional feature of the present brush **10** is that a spiraling thread (not shown) is disposed around an outer longitudinal surface of at least one of the bristles **18**, **24**, **26**, **130**, causing an increased surface area and edges of the bristle for collecting loose pet hairs.

[0073] Referring now to FIGS. **21**A-**21**D, an exemplary pet or animal carding brush is generally designated **146**, and is designed to simultaneously disentangle hairs and remove loose hair or thin, heavy hair from an animal or a pet **148** (FIG. **21**D). Included in the carding brush **146** are an elongated handle **150** and a comb base **152**. In a preferred embodiment, the handle **150** is coated with resilient, soft material for a comfortable grip, and allows the user to hold the handle in many orientations. The handle **150** is connected at one end to the comb base **152** and at an opposite end has an optional bore **154**, e.g., for hanging up the brush **146**.

[0074] A first or large comb **156** for a larger area of the animal **148** (e.g., a body) is fixedly attached to one side of the comb base **152** near an end of the base, and an optional second or small comb **158** for a smaller area of the animal (e.g., a face) is similarly affixed to an opposite side of the comb base closer to the handle **150**. For example, the large comb **156** is used for a larger dog or relatively flat areas of a smaller dog, and the small comb **158** is used for a small dog or smaller areas of the larger dog. An important feature of the first and second combs **156**, **158** is that both combs have "J"-shaped teeth when viewed from the side (FIG. **21**C), where the "J" configuration refers to an inner leading surface **160** of a comb tooth **162** of at least one of the first and second combs **156**, **158** that has a rearward facing curvature relative to a linear or straight main portion of the comb. As a result of the "J" configuration, lifting of the hairs away from the skin is readily achieved and improves operational hair removal efficiency.

[0075] Referring now to FIGS. **21**D-**21**E, in another embodiment, the comb base **152** has a "C"-shaped support member **164** behind the first comb **156** for resting on the animal's outer fur coat. As best seen in FIG. **21**D, a rear edge **166** of the "C"-shaped support member **164** rests on the animal's back and acts as a guide while carding the fur/coat. By the user setting a proper angle of the handle **150** relative to a fur coat contour while resting the "C"-shaped support member **164** on the fur coat, the comb teeth **162** of the first comb **156** are prevented from directly contacting, and thus irritating the animal's skin.

[0076] In operation, the loose or dead hairs are collected in a chamber **168** defined by an inner surface of the comb base **152** between the first comb **56** and the "C"-shaped support member **164**. At least one clear or transparent window region **170** (FIG. **21**E), preferably constructed from a plastic material, is disposed near a top portion of the comb base **152** for viewing and monitoring the collection of hairs in the chamber **168** during carding. When the chamber **168** becomes full with the collected hairs, the user stops the carding and removes the collected hairs from the chamber, and then continues carding.

[0077] Referring now to FIGS. **21**A, **21**E, and **21**F, in another embodiment, the leading surface **160** of each comb tooth **162** has a face **172** that is stepped or grooved for increasing a number of edges that help collect and remove the loose hairs more efficiently and quickly than a conventional comb tooth. Although the first comb **156** having the stepped face **172** is shown, it is contemplated that the second comb **158** also has a similar stepped face configuration. At least one stepped or grooved level **174** is formed on the leading surface **160** of each comb tooth **162** at different heights extending generally perpendicularly relative to the longitudinal axis of the handle **150**. An angular orientation and a relative spacing of the levels **174** are variable to suit the situation. For example, although a horizontally stepped face is shown, it is also contemplated that the stepped level **174** is diagonal or inclined at an angle relative to an edge line defined by the rear edge **166** of the "C"-shaped support member **164**. Such levels **174** help remove the loose hairs from more than one coat (i.e., layer) per stroke than a conventional carding comb.

[0078] Referring now to FIGS. **22**A-**22**C, an exemplary pet or animal multi-purpose comb is generally designated **176**, and is designed for both grooming the animal's fur coat and removing fleas from the coat. While a grooming or finish comb generally has loosely-spaced teeth, a flea comb has rather densely-spaced teeth for effectively pulling out the fleas from the animal's coat. An important feature of the present comb **176** is that these two different combs are combined into one multi-purpose comb. Included in the multi-purpose comb **176** is a pair of slidably connected first and second bars **178**, **180**. The first bar **178** has a plurality of first teeth **182** directly extending transverse to a longitudinal axis of the first bar **178** from one side of the first bar. Similarly, the second bar **180** has a plurality of second teeth **184** directly extending from one side of the second bar. Both first and second teeth **182**, **184** extend from the same side of the respective bars **178**, **180**, and preferably have identical first and second pitch distances or spacing P**1**, P**2**, where the first pitch distance P**1** is associated with the first teeth **182** and the second pitch distance P**2** is associated with the second teeth **184**.

[0079] An elongated opening **186** is provided in the first bar **178** and is configured for loosely accommodating a slide button **188** that is attached to the second bar **180** such that the second bar is slidable in a longitudinal direction of the opening **186** relative to the first bar **178**. Connection of the bars **178**, **180** is achieved by stacking the first bar **178** directly on top of the second bar **180** and inserting the button **188** into the opening **186**. The respective configurations of the button **188** and the opening **186** are such that the first and second bars **178**, **180** are slidably connected to each other. Because the opening **186** is longitudinally longer than the button **188**, the button transitions between a first position and a second position within the opening for varying a pitch distance between the adjacent first and second teeth **182**, **184**.

[0080] More specifically, when the button **188** is in the first position, the first teeth **182** are aligned directly on top of the second teeth **184** (FIG. **22**B), causing a third pitch distance P**3** between the adjacent first and second teeth **182**, **184** to have a same width as the first or second pitch distance P**1**, P**2** when viewed from above. In contrast, when the button **188** is in the second position, the first and second teeth **182**, **184** are positioned in a semi- or half-staggered

relationship with each other (FIG. **22**C), causing a fourth pitch distance P**4** between the adjacent teeth **182**, **184** to have a half width of the first or second pitch distance P**1**, P**2** when viewed from above. As a result, when the button **188** is in the first position, the multi-purpose comb **176** is used for regular combing, but when the button is in the second position, the comb is used for the flea removal. Optionally, the button **188** and the bars **178**, **180** have at least one resilient, soft coated region **190** on selected outer surfaces. Referring now to FIGS. **23**A-**23**C, in another embodiment, the multi-purpose comb **176** has a housing **192** configured for accommodating a plurality of foldable combs **194**, such as a finishing comb, a flea comb, and a detangling comb. Multiple combs **194** are pivotably folded into the housing **192** in a manner similar to a conventional pocket knife. More specifically, the housing **192** has at least two opposite longer sidewalls **196**. Both sidewalls **196** are constructed and arranged for defining a central cavity **197** dimensioned for accommodating the plurality of foldable combs **194** inside the housing **192**. Each foldable comb **194** is pivotally connected to corresponding ends **198** of the sidewalls **196**, and thus rotates in and out of the housing **192** about a pivot point **200** for unfolding and folding at least one of the combs **194** from the housing **192**. Optionally, the housing **192** has at least one resilient, soft coated region **202** on an outer surface of the housing, such as a backbone portion of the housing.

[0081] Referring now to FIGS. **24**A-**24**C, an exemplary pet or animal nail clipper is generally designated **204**, and is designed for trimming nails of the animal. Included in the present nail clipper **204** are a first cutting member **206** and a second cutting member **208** pivotally connected to the first cutting member **206**. A cutter opening **210** is defined by the first and second cutting members **206**, **208** for inserting an animal's nail. Both first and second cutting members **206**, **208** are pivotally movable about a pivot pin **212** relative to a plane defined by the cutting members **206**, **208**. During the pivotal movement, the cutting members **206**, **208** transition between an open position for receiving the animal's nail in the cutter opening **210**, and a closed position for cutting the animal's nail.

[0082] An important aspect of the present clipper **204** is that cutting members **206**, **208** have corresponding first and second cutter handles **214**, **216** with corresponding first and second finger openings **218**, **220** configured for accommodating a hand of the user. Preferably, a scissor-like loop configuration is employed for the handles **214**, **216** to provide a better and easier grip and control of the cutting members **206**, **208** during use. This configuration allows thumb movement inside either the first or second finger opening **218**, **220** while the clipper **204** is held in the user's hand for trimming. Accordingly, the present clipper **204** can be used by both left- and right-handed users.

[0083] Referring now to FIGS. **24**B and **24**C, another aspect of the present clipper **204** is that a height-adjustable nail guard **222** is releasably attached to one of the first and second cutting members **206**, **208** for preventing harm to the animal resulting from inadvertently cutting into a blood-filled portion of the nail. When the nail is inserted into the cutter opening **210** for trimming, the nail only extends to the nail guard **222**, thereby providing a consistent depth of cut. Optionally, at least a portion of the handles **214**, **216** is covered with a soft-touch resilient material for extra comfort.

[0084] Referring now to FIGS. **25**A-**25**D, in another embodiment, the present nail clipper **204** includes a pair of cutting jaws, namely an upper jaw **224** and a lower jaw **226**, disposed at distal ends of the cutting members **206**, **208** for creating a nail cutting action in the cutter opening **210**. The terms "proximal" and "distal" are used to describe the opposing longitudinal ends of the cutting members **206**, **208**. The term "proximal" refers to the ends of the cutting members **206**, **208** that are closest to the user during use. Conversely, the term "distal" refers to the opposite ends of the cutting members **206**, **208** that are farthest during use.

[0085] More specifically, the pair of jaws **124**, **126** includes at least two sets of cutting edges. A first set **128** of cutting edges is disposed near the distal ends of the cutting members **106**, **108** at a predetermined angle relative to the longitudinal axis of the first or second cutting member. A second set **130** of cutting edges is disposed at the distal ends of the cutting members **106**, **108** generally perpendicular to the longitudinal axis of the first or second cutting member. Preferably, the first cutting edges **228** are longer than the second cutting edges **230** in a longitudinal direction.

[0086] Either set of cutting edges **228**, **230** can be used for trimming the nails depending on a user's cutting position or preference. These multi-angled cutting edges **228**, **230** allow the user to cut the animal's nails at an angle or straight. For example, when the animal is positioned directly in front of the user, the second set **230** of cutting edges is used to cut the nails (FIG. **25**D). Otherwise, the first set **228** of cutting edges may be used (FIG. **25**C).

[0087] Another important aspect of the present clipper **204** is that a transparent viewing window **232** is provided near the distal ends of the first cutting member **206** for allowing observation of the inserted nail in the cutter opening **210**. Thus, the user can readily observe the animal's nail inserted into the cutter opening **210** while trimming. It is also contemplated that a plurality of incremental index marks **234** are spaced and positioned along a direction transverse to a longitudinal axis of the first or second set **228**, **230** of cutting edges for nail depth alignment.

[0088] In a preferred embodiment, each cutting member **206**, **208** has at least one ergonomically shaped squeeze grip portion **236** for providing better shock absorption, and reducing hand fatigue during use. Specifically, the grip portion **236** has at least three different widths along the longitudinal axis of the corresponding cutting members **206**, **208**. As for each cutting member **206**, **208**, its distal end has a first width, its proximal end has a second width, and a middle region near the distal end has a third width. Preferably, the first width is shorter than the second width, and the second width is in turn shorter than the third width.

[0089] While particular embodiments of the present grooming tools have been shown and described, it will be appreciated by those skilled in the art that changes and modifications may be made thereto without departing from the present disclosure in its broader aspects and as set forth in the following claims.

What is claimed is:

1. A brush configured for removing debris and hairs, the brush comprising:

at least one surfaced body having a first pad;

a plurality of first bristles extending from the first pad, one end of each first bristle being connected to the pad;

said bristles being helical in shape.

2. The brush of claim 1, further including a second pad extending from an opposite side of said body, said second pad including a plurality of second bristles, said first pad and said second pad both being rotatable 90, 180, 270, 360 degrees clockwise or counterclockwise relative to a longitudinal axis of said body.

3. The brush of claim 1, wherein the first bristles are arranged to be irregularly spaced further apart on two opposite longitudinal sides, generally parallel to the longitudinal axis of said body than a middle or center region of the first pad.

4. The brush of claim 2, wherein a radially extending head portion of the bristle has a tapered square shape for enhancing collection of the loose hairs by spacing out the bristles on the sides, and said bristles have a square-shaft when viewed in horizontal cross-section, and the bristles are disposed more densely in the middle or center region of said pad than on the sides of said pad, thereby enhancing a stroke resistance force for collecting maximum amount of loose hairs.

5. The brush of claim 1, wherein said body is provided with a handle, and said handle has an opening, cavity, or slot for releasably storing at least one comb, using a set of locks disposed on opposite inner surfaces of the handle.

6. The brush of claim 1, wherein the bristles are rotatably attached to said body.

7. A multi-purpose comb, comprising:

a housing including a pair of sidewalls defining a central cavity;

a plurality of foldable combs pivotably mounted at corresponding ends to the housing for insertion into, and withdrawal from said cavity.

8. The comb of claim 7, wherein said plurality of foldable combs include a finishing comb, a flea comb, and a detangling comb.

9. A multi-purpose comb for grooming an animal, comprising:

an elongated handle connected at one end to a comb base;

first comb constructed and arranged for a larger area of the animal is attached to one side of said comb base near an end of the base;

an optional second comb constructed and arranged for a smaller area of the animal is affixed to an opposite side of the comb base closer to said handle.

10. The comb of claim 9, wherein both combs have "J"-shaped teeth when viewed from the side, where the "J" configuration refers to an inner leading surface of a comb tooth of at least one of the first and second combs that has a rearward facing curvature relative to a linear or straight main portion of the comb.

11. The comb of claim 9, further including said comb base having a "C"-shaped support member behind said first comb for resting on a coat of the animal, wherein a rear edge of the "C"-shaped support member rests on the animal's back and acts as a guide while carding the fur/coat.

12. The comb of claim 10, further including a chamber defined by an inner surface of the comb base between the first comb and the "C"-shaped support member, and at least one clear or transparent window region is disposed near a top portion of the comb base for viewing and monitoring the collection of hairs in the chamber during carding.

13. The comb of claim 9, further including a leading surface of each comb tooth has a face that is stepped or grooved for increasing a number of edges that help collect and remove the loose hairs, such that at least one stepped or grooved level is formed on a leading surface of each comb tooth at different heights extending generally perpendicularly relative to the longitudinal axis of the handle.

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