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(71) Applicant: SKULL SHAVER, LLC [US/US]; 1503 Glen Avenue, Suite 160, Moorestown, NJ 08057 (US).

(72) Inventor; and

(71) Applicant : KULHRESHTHA, Neel, B. [US/US]; 1503 Glen Avenue, Suite 160, Moorestown, NJ 08057 (US).

(74) Agent: LEHRER, Norman, E.; 1205 North Kings Highway, Cherry Hill, NJ 08034 (US).

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Declarations under Rule 4.17:

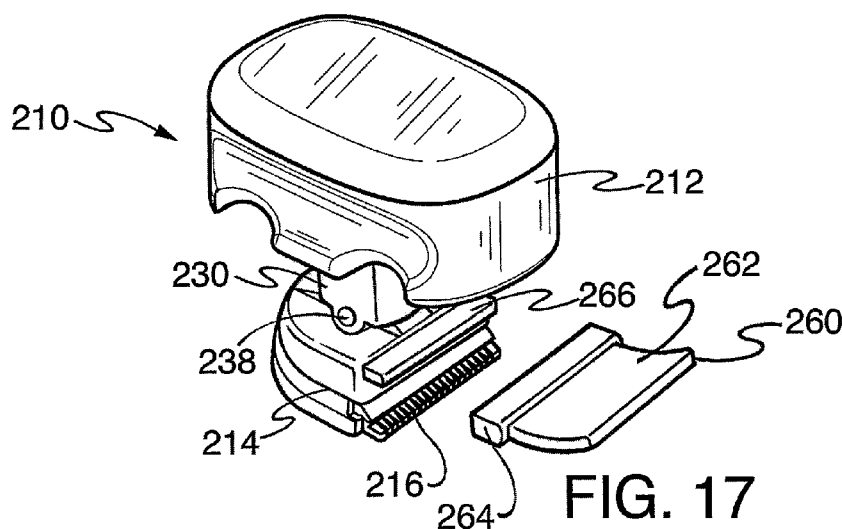
— of inventorship (Rule 4.17(iv))

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— with international search report (Art. 21(3))

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(54) Title: ELECTRIC HAIR CLIPPER



(57) Abstract: An electric hair clipper (10) includes a housing (12) containing an electrical source and drive-related components. A clipper mechanism (14) having a reciprocating clipper (16) and including a finger rest (260) is located beneath the bottom of the housing (12) but is spaced therefrom by a pivotal central hub (118) that extends downwardly from the bottom of the housing. The housing (12), central hub (118) and clipper mechanism (14) are arranged such that a person can hold the electric hair clipper by placing his or her fingers in the space between the housing (12) and the clipper mechanism (14) with the central hub (118) lying between two fingers and with the back of the person's fingers resting in a pair of elongated spaced apart recesses (26, 28) formed in the bottom of the housing (12) on opposite sides of the hub (118) and one finger resting on the finger rest (260).

Description

ELECTRIC HAIR CLIPPER

Cross-Reference to Related Applications

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This application is a continuation-in-part of U.S. Patent Application Serial No. 14/910,345, filed February 5, 2016, which was based on PCT Application No. PCT/US2014/024,000, filed March 12, 2014, which was a continuation-in-part of U.S. Patent Application Serial No. 13/962,149, filed
10 August 8, 2013.

Technical Field

The present invention is directed toward electric hair clippers or
15 trimmers and, more particularly, toward electric hair clippers that allow a person to trim his or her own hair in areas such as the back of the neck that are otherwise difficult to do with conventional clippers.

Background Art

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Electric hair clippers generally include a hand-held housing that contains a motor and power supply-related components that drive a reciprocating trimming blade. The housing also provides a form that fits the user's hand sufficiently as a grip so as to allow the user to manipulate the hair
25 clipper. Various types of clippers are well known in the art. In general, the clippers comprise an elongated housing with a reciprocating trimming blade at one end with the blade being perpendicular to the axis of the housing. While such conventional clippers are relatively easy to manipulate when trimming

another person's hair, they are awkward to use on one's own hair and particularly the back of one's neck.

There is, therefore, a need for an electric hair clipper that allows a person to trim his or her own hair in areas such as the back of the neck that are
5 otherwise difficult to do with conventional clippers.

Disclosure of the Invention

The present disclosure relates to an electric hair clipper that
10 includes a housing containing an electrical source and drive-related components. In many embodiments, a clipper mechanism having a reciprocating clipper is located beneath the bottom of the housing but is spaced therefrom by a central hub that extends downwardly from the bottom of the housing. The housing, central hub and clipper mechanism are arranged such that a person can hold the
15 electric hair clipper by placing his or her fingers in the space between the housing and the clipper mechanism with the central hub lying between two fingers and with the back of the person's fingers resting in a pair of elongated spaced apart recesses formed in the bottom of the housing on opposite sides of the hub. The front of one of the person's finger rests on a curved ledge to allow
20 for some downward pressure and help control the operation of the clipper.

When the electric hair clipper of the present invention is held in the above described manner, it is possible to easily either grip the hair clipper with two fingers as between the thumb and index finger, or between the index and middle fingers and properly orient cutting clipper. This allows the person to easily
25 trim areas such as the back of the neck that are otherwise difficult to do.

Other objects, features, and advantages of the invention will be readily apparent from the following detailed description of a preferred embodiment thereof taken in conjunction with the drawings.

Brief Description of the Drawings

For the purpose of illustrating the invention, there are shown in the accompanying drawings forms that are presently preferred; it being understood
5 that the invention is not intended to be limited to the precise arrangements and instrumentalities shown.

Figure 1 is a top perspective view of a first embodiment of an electric hair clipper in accordance with the invention;

Figure 2 is a bottom perspective view thereof;

10 Figure 3 is a top plan view thereof;

Figure 4 is a bottom plan view thereof;

Figure 5 is a left side elevational view thereof, the right side being the mirror image thereof;

Figure 6 is a rear elevational view thereof;

15 Figure 7 is a front elevational view thereof;

Figure 8 is a perspective view showing how the electric clipper of the invention is held and used to trim one's hair;

Figure 9 is a top perspective view of a second embodiment of an electric hair clipper in accordance with the invention;

20 Figure 10 is a bottom perspective view of the second embodiment;

Figure 11 is a left side elevational view of the second embodiment, the right side being the mirror image thereof;

Figure 12 is a rear elevational view of the second embodiment;

Figure 13 is a front elevational view thereof;

25 Figure 14 is a left side elevational view of a third embodiment of an electric hair clipper in accordance with the invention, the right side being the mirror image thereof;

Figure 15 is a rear elevational view of the third embodiment;

Figure 16 is a front elevational view thereof;

30 Figure 17 is a top perspective view of the third embodiment with a portion exploded;

Figure 18 is a bottom perspective view of the third embodiment;

Figure 19 is a top perspective view of a forth embodiment of an electric hair clipper in accordance with the invention, and

Figure 20 is a top perspective view of a fifth embodiment of an electric hair clipper in accordance with the invention;

5

Best Mode for Carrying Out the Invention

A more complete understanding of the components, processes, and apparatuses disclosed herein can be obtained by reference to the accompanying figures. These figures are intended to demonstrate the present disclosure and are not intended to show relative sizes and dimensions or to limit the scope of the exemplary embodiments.

Although specific terms are used in the following description, these terms are intended to refer only to particular structures in the drawings and are not intended to limit the scope of the present disclosure. It is to be understood that like numeric designations refer to components of like function.

The term "about" when used with a quantity includes the stated value and also has the meaning dictated by the context. For example, it includes at least the degree of error associated with the measurement of the particular quantity. When used in the context of a range, the term "about" should also be considered as disclosing the range defined by the absolute values of the two endpoints. For example, the range "from about 2 to about 4" also discloses the range "from 2 to 4."

In one embodiment, the present disclosure relates to a hair clipper that comprises a gripping means and a cutting clipper or trimmer, configured in such a manner that allows the hair clipper to be oriented with the grip portion above the cutter portion with space between them for a persons fingers, thus making it anatomically convenient to hold the hair clipper and trim one's own hair.

30

Referring now to the drawings in detail wherein like reference numerals have been used throughout the various figures to designate like elements, there is shown in Figures 1 - 8 a first embodiment of an electric hair

clipper or trimmer constructed in accordance with the principles of the present invention and designated generally as 10.

5 The hair clipper 10 comprises an upper portion 12 that provides a substantially rectangularly shaped housing for a power source and motor related components, and a trimmer mechanism 14 that includes a reciprocating straight line trimmer 16. The connection between the motor and the trimmer head passes through the central hub 18 which may have an enlarged lower portion 20. The straight line trimmer 16 is, per se, conventional and is well known in the art. The motor (not shown) is also mechanically coupled to the trimmer 16 in a known
10 manner.

The motor, power supply and other related components along with the trimmer are not, per se, part of the present inventive concept. They are all individually common and well known in the art. Accordingly, detailed descriptions of the same are not believed to be necessary.

15 The housing 12 further comprises a particular form that provides a gripping means, and fits the hand in a comfortable manner. The gripping means includes a pair of elongated recesses in the form of parallel concave surfaces 22 and 24 formed on either side of the housing 12. The concave surfaces define a plane that is parallel to the line formed by the trimmer 16. A second pair of
20 elongated recesses in the form of concave surfaces 26 and 28 are formed in the under surface of the housing 12 above the trimmer 16. The second pair of concave surfaces 26 and 28 are arranged to be perpendicular to the first pair of concave surfaces 22 and 24 and also define a plane that is parallel to the line defined by the trimmer 16.

25 Concave surfaces 22 and 24 are configured to allow the hair clipper 10 to be gripped between the thumb and tips of several of one's remaining fingers with the palm of one's hand overlying the housing 12. Holding the trimmer 10 in this manner will allow the user to trim sideburns or other easy to reach facial hairs. However, when it is desired to trim harder to reach areas
30 such as the back of one's neck, the clipper 10 is held in the manner shown in Figure 8.

As shown, the person places his or her fingers in the space between the housing 12 and the clipper mechanism 14 with the central hub 18 lying between two fingers and with the back of the person's fingers resting in the concave recesses or grooves 26 and 28. The person's fingers are also gripping the central hub 18. When the clipper is held in this manner, it can be seen that the clipper or trimmer 16 is in line with the person's fingers making it easy for the person to trim the back of his or her neck.

The second embodiment 110 of the invention shown in Figures 9 to 13 is very similar to the first embodiment shown in Figures 1 to 8 and operates in the same manner. The difference is primarily in the central hub section shown at 118. In the first embodiment, the central 18 was fixed. In the second embodiment, the central hub is comprised of two parts hinged or pivoted together.

More particularly, the central hub 118 is comprised of upper hub portion 130 and lower hub portion 120. Lower hub portion 120 includes an upwardly extending tongue 132 and the upper hub portion 130 includes a pair of downwardly extending ears 134 and 136 lying on either side of the tongue 132. A pin 138 extends through apertures (not shown) located in the tongue 132 and ears 134 and 136. This pivot or hinge arrangement allows for limited pivotal movement forward and back (as viewed in Figure 11) between the housing 112 and the trimmer mechanism 114.

In addition, and as best seen in Figures 9, 11 and 13, a rib 140 extends forwardly across the front wall 142 of the lower hub portion 120 just above the trimmer 116. In the preferred embodiment, the rib 140 extends entirely across the width of the lower hub portion 120. When the electric hair clipper or trimmer 110 is held, for example, in the manner shown in Figure 8, the rib 140 functions to advise the user that his finger is close to the trimmer 116. This lets the user know that he is using the trimmer 110 properly and helps to prevent injuries.

The third embodiment of the invention shown in Figures 14 to 18 is very similar to both the first and second embodiments and operates in the same manner. For convenience, similar elements shown in these figures are

designated with similar reference numerals but preceded by the number 2. For example, the trimmer blade 216 of the trimmer 210 is essentially the same as trimmer 16 of the first embodiment which is essentially the same as trimmer 116 of the second embodiment. For this reason, it is not believed that a detailed
5 description of the third embodiment is necessary as it operates and is used in essentially the same manner as the first and second embodiments.

The primary difference in the third embodiment is the addition of the curved finger rest 260. The finger rest 260 extends forwardly from the front wall 242 of the lower hub portion 220 above the trimmer 216 and curves slightly
10 upwardly. The finger rest 260 can be permanently secured to the front wall 242 or can be detachable therefrom.

As shown most clearly in Figure 17, the finger rest 260 is comprised of a curved portion 262 and an elongated attaching socket portion 264. The front wall 242 of the hub portion 220 includes a mating projection 266.
15 The socket portion 264 has is open and fits over and onto the projection 266 to position the finger rest 260 in place as shown in Figure 14. It has been found that a good friction fit between the parts is sufficient to maintain the finger rest 260 in position even during use.

In use, the back of one of the person's fingers rests in the concave
20 recess or groove 228. The front of the person's finger presses down on the finger rest 260. This provides several advantages over the first two embodiments. First, it provides for added control over the maneuvering of the trimmer 210. Second, it allows the user to provide some downward pressure to the trimmer blade 216 to press it against the skin if desired and it prevents the
25 user's finger from moving downwardly onto the trimmer blade 216.

The embodiments 310 and 410 shown in Figures 19 and 20 illustrate how the finger rest described above can also be applied to a more standard razor or trimmer which has an elongated appearance with the trimmer blade at the lower end thereof. In Figure 19, the finger rest 360 includes a curved
30 portion 362 that extends outwardly and upwardly from the front wall 342 of the trimmer body or housing 312 just above the trimmer blade 316. In the

embodiment shown in Figure 20, the finger rest 460 is formed within the front wall 442 of the body or housing 412 of the trimmer 410.

In the embodiments of the invention shown in Figures 19 and 20, the trimmer can be held and used in substantially the same manner as the
5 embodiments described above. That is, the trimmer can be held between the user's first and second fingers with one finger at the back of the trimmer and one finger adjacent the front wall 342 or 442 with the front or pad surface of the finger resting on or pressing down on the finger rest 360 or 460.

The present disclosure has been described with reference to
10 exemplary embodiments. Obviously, modifications and alterations will occur to others upon reading and understanding the preceding detailed description. It is intended that the present disclosure be construed as including all such modifications and alterations insofar as they come within the scope of the appended claims or the equivalents thereof.

15

Claims

- 5 1. An electric hair clipper comprising:
 a housing for containing an electrical source and drive-related
 components, said housing having a top surface and a bottom surface;
 a clipper mechanism located beneath said bottom surface of said
 housing and spaced therefrom, said clipper mechanism including a reciprocating
10 trimmer blade having a front edge defining a straight line, said clipper
 mechanism including a finger rest located above the position of the trimmer
 blade and extending outwardly;
 a central hub having an upper portion connected to and extending
 downwardly from said bottom surface of said housing, said central hub having a
15 lower portion connected to said clipper mechanism, and
 said housing, central hub and clipper mechanism being arranged
 such that a person can hold the electric hair clipper by placing his or her fingers
 in the space between said housing and said clipper mechanism with the central
 hub lying between two fingers with the bottom of the housing contacting the back
20 of the person's fingers and with the front of one of the person's two fingers
 resting on said finger rest.
2. The electric hair clipper as claimed in Claim 1 further including a
 pair of elongated spaced apart recesses formed in said bottom of said housing
25 and being located on opposite sides of said hub and wherein the back of said
 person's fingers rest in said recesses.
3. The electric hair clipper as claimed in Claim 1 wherein said finger
 rest is removably attached to said clipper mechanism.
- 30 4. The electric hair clipper as claimed in Claim 1 wherein said finger
 rest is curve upwardly away from said trimmer blade.

5. The electric hair clipper as claimed in Claim 1 further including pivot means located between said upper portion and said lower portion of said central hub permitting said clipper mechanism to pivot relative to said housing.

5

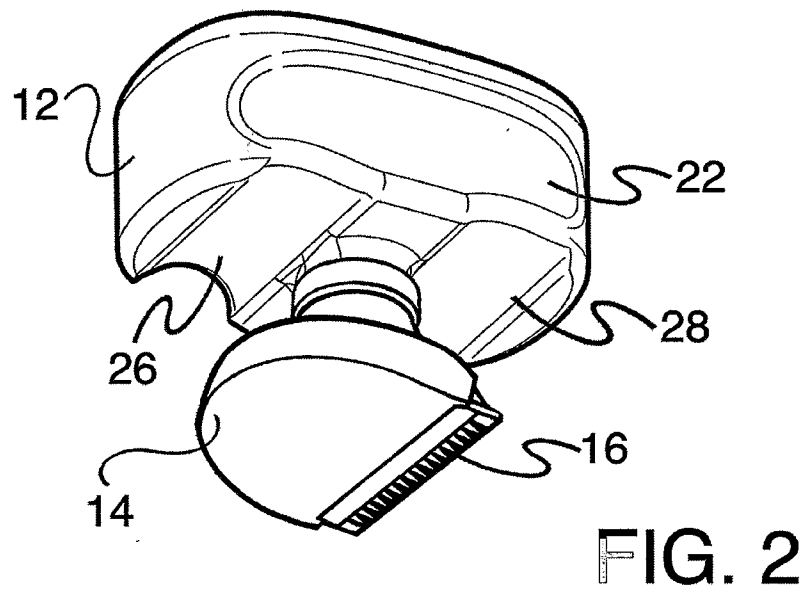
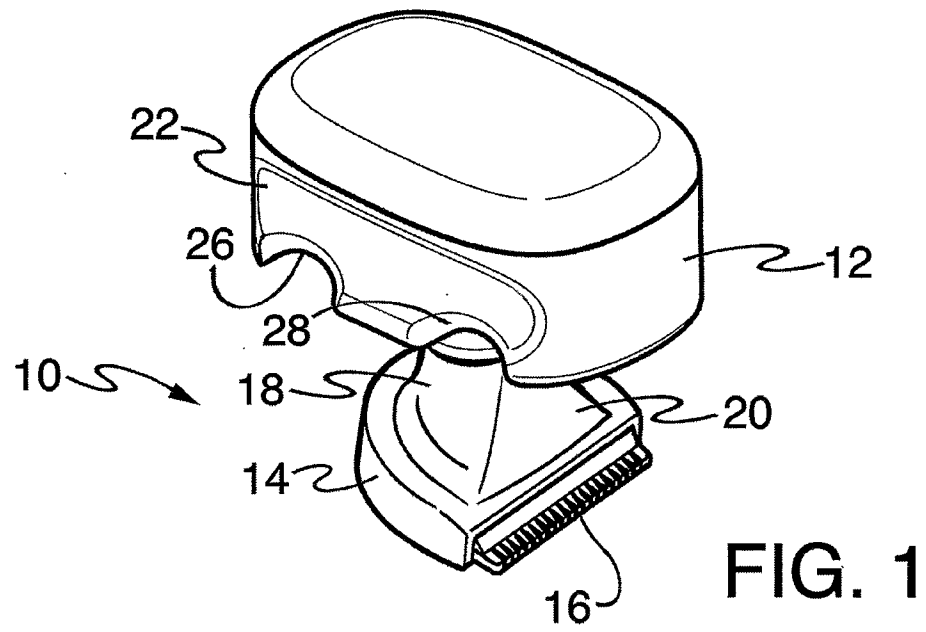
6. An electric hair clipper comprising:
a housing for containing an electrical source and drive-related components, said housing having a top and a bottom and a front wall,
a clipper mechanism located at the bottom of said housing and
10 including a reciprocating trimmer blade having a front edge defining a straight line, and
a curved finger rest carried by said housing and located above the position of the trimmer blade, said finger rest extending across the width of said front wall.

15

7. The electric hair clipper as claimed in Claim 6 wherein said finger rest extends outwardly and upwardly from said front wall.

8. The electric hair clipper as claimed in Claim 6 wherein said finger
20 rest extends inwardly and upwardly from said front wall into the interior of said housing.

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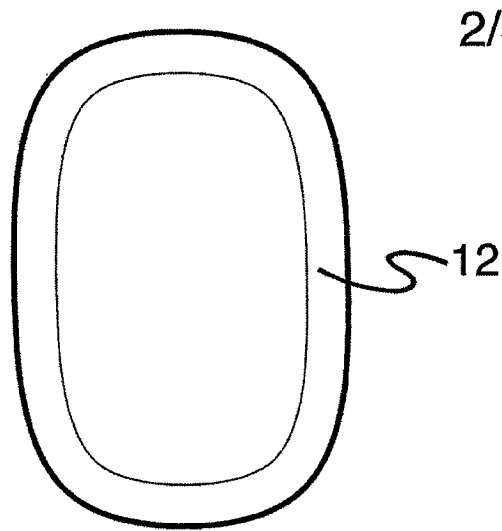


FIG. 3

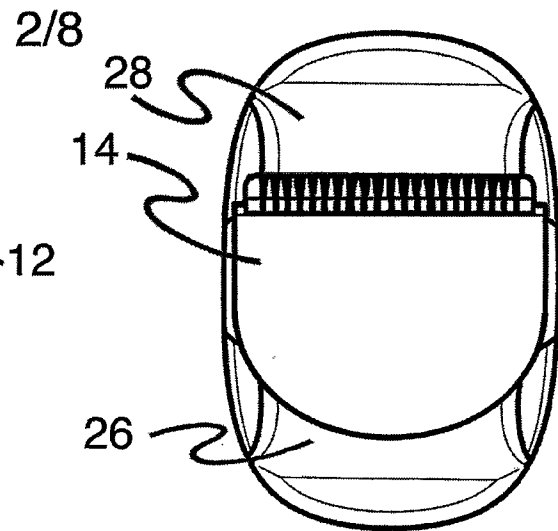


FIG. 4

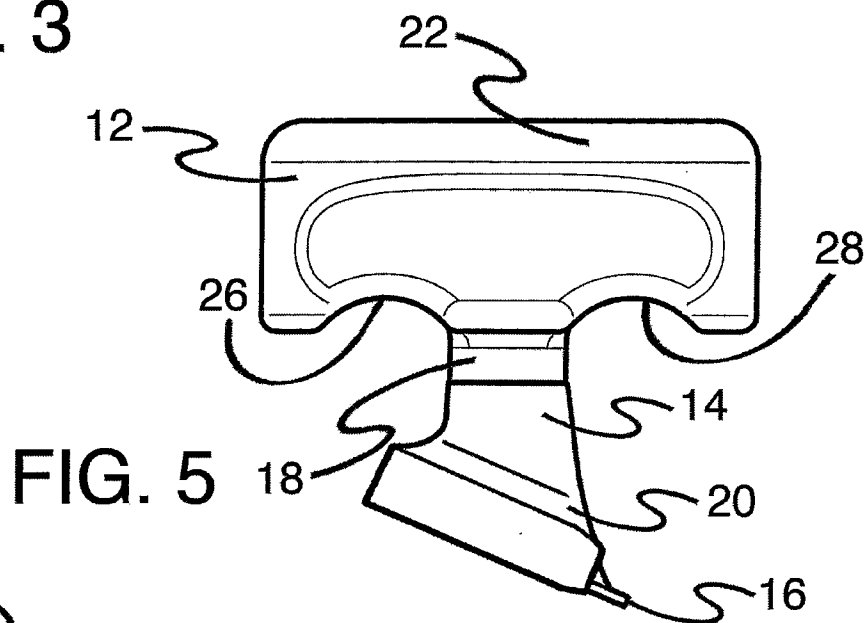


FIG. 5

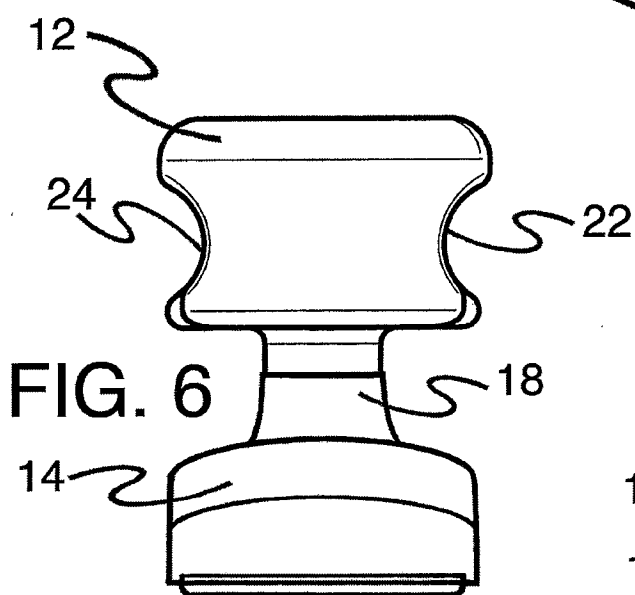


FIG. 6

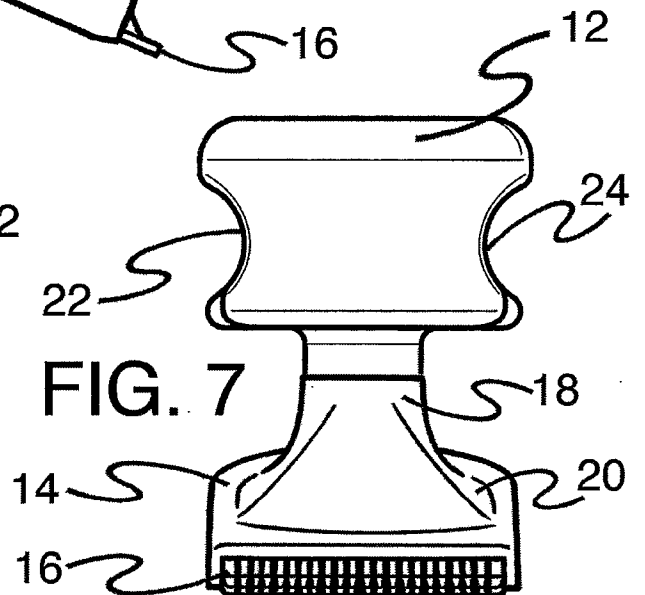


FIG. 7

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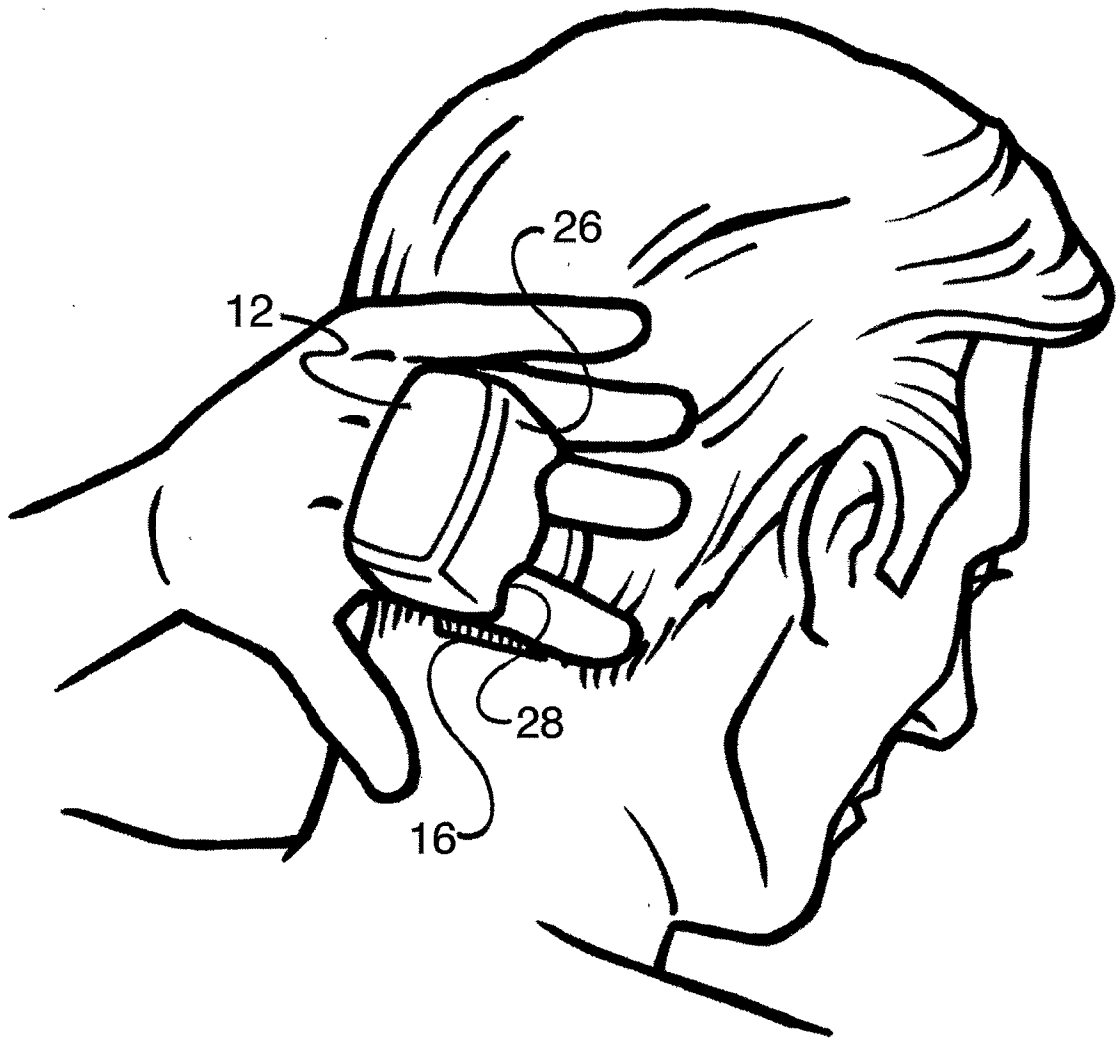
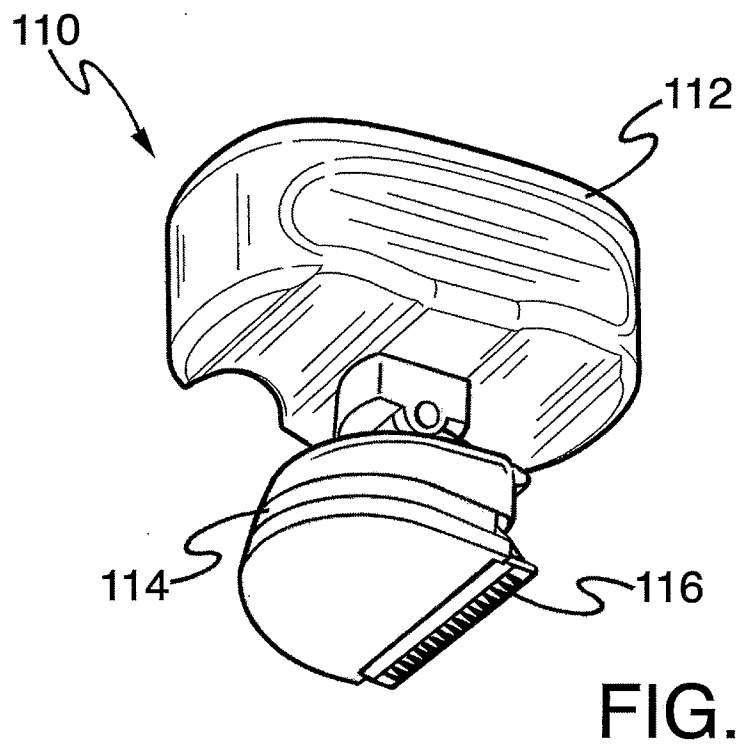
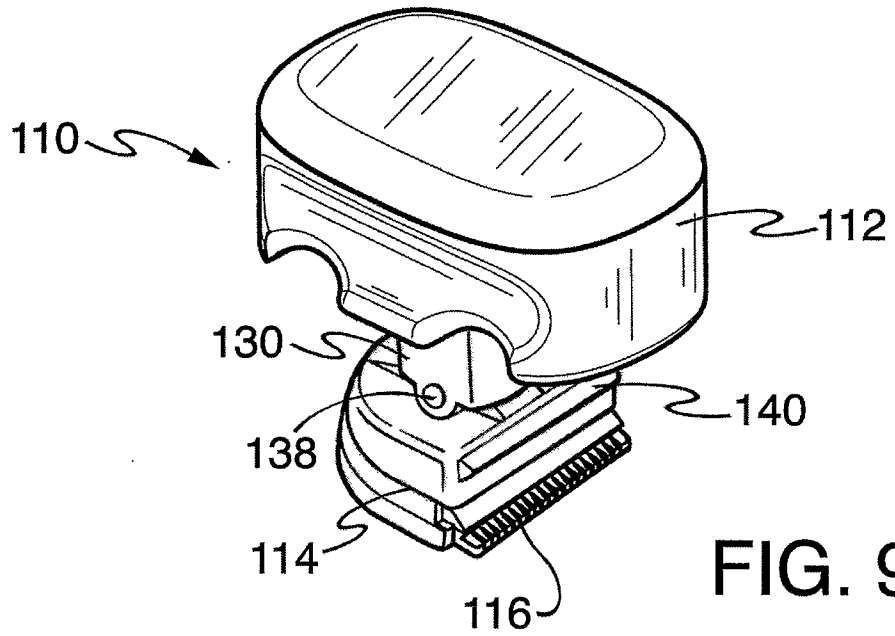
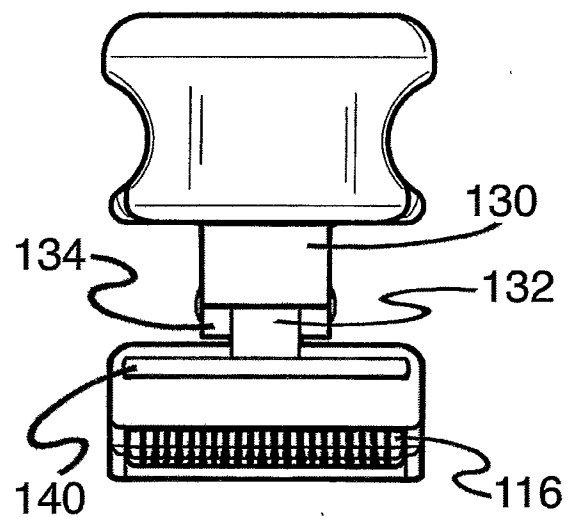
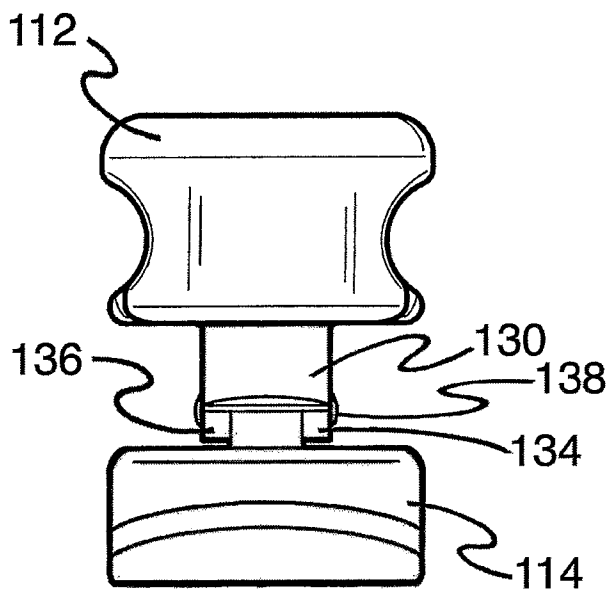
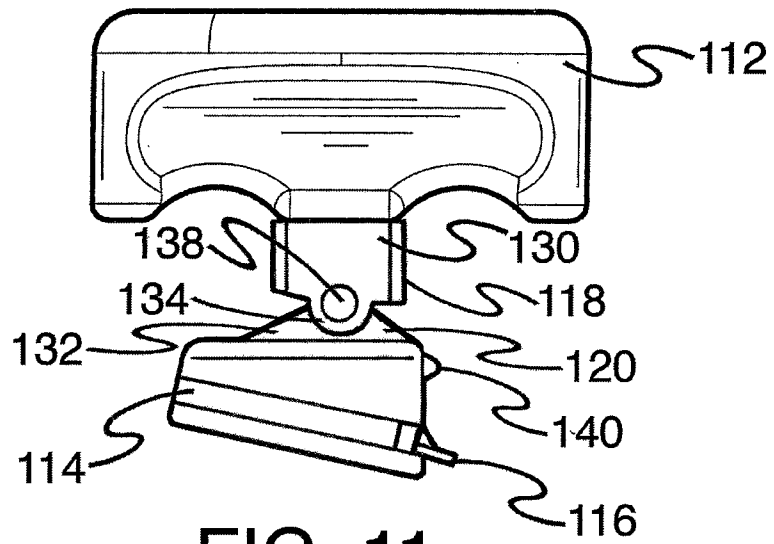


FIG. 8

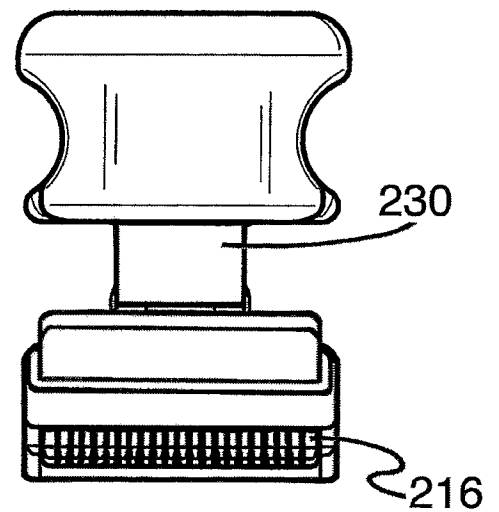
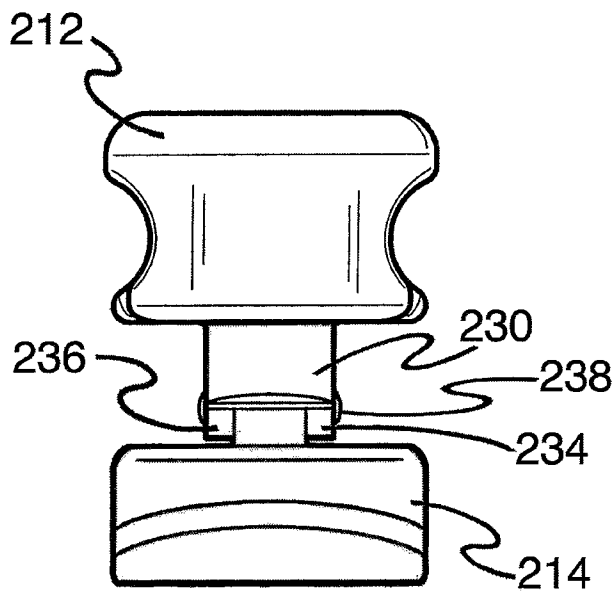
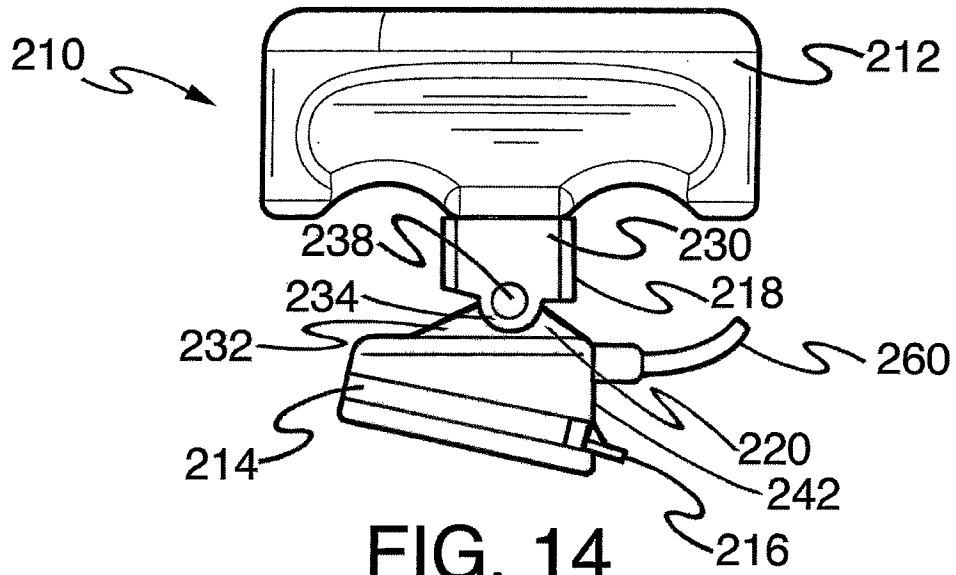
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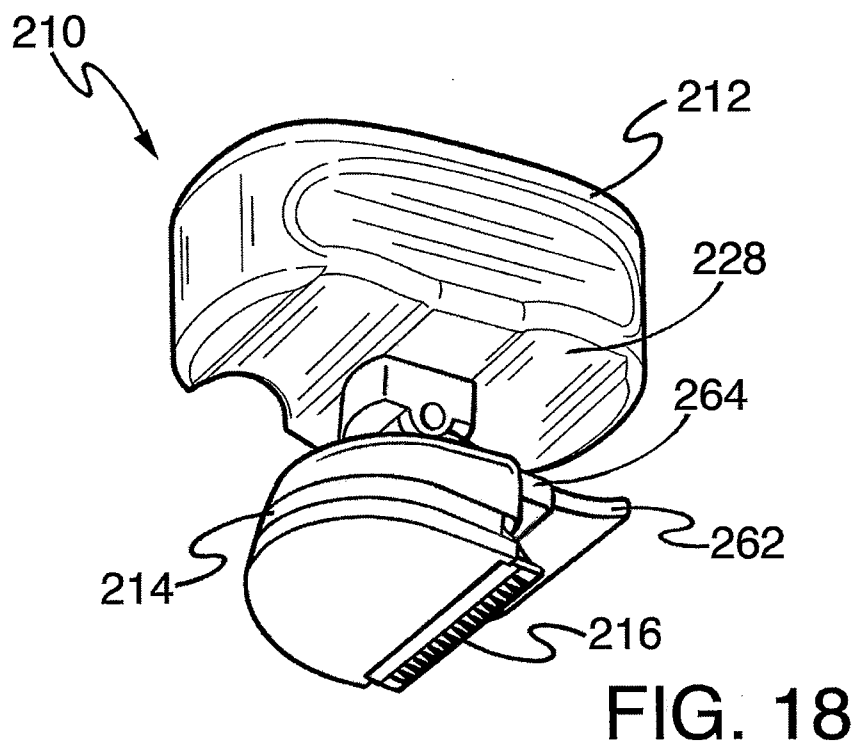
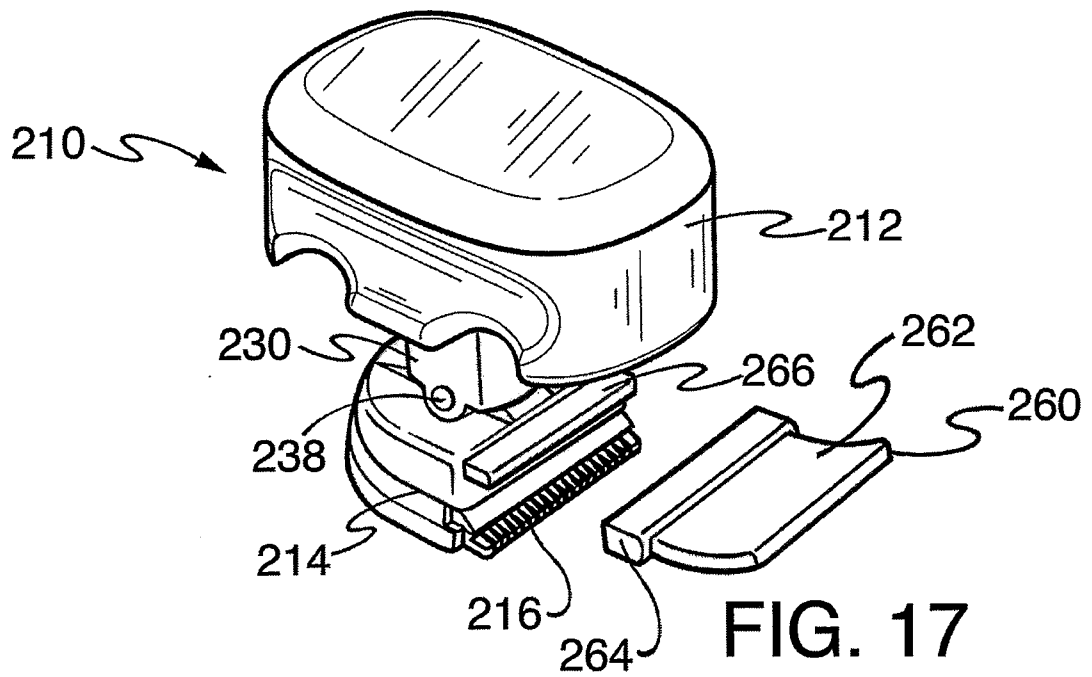
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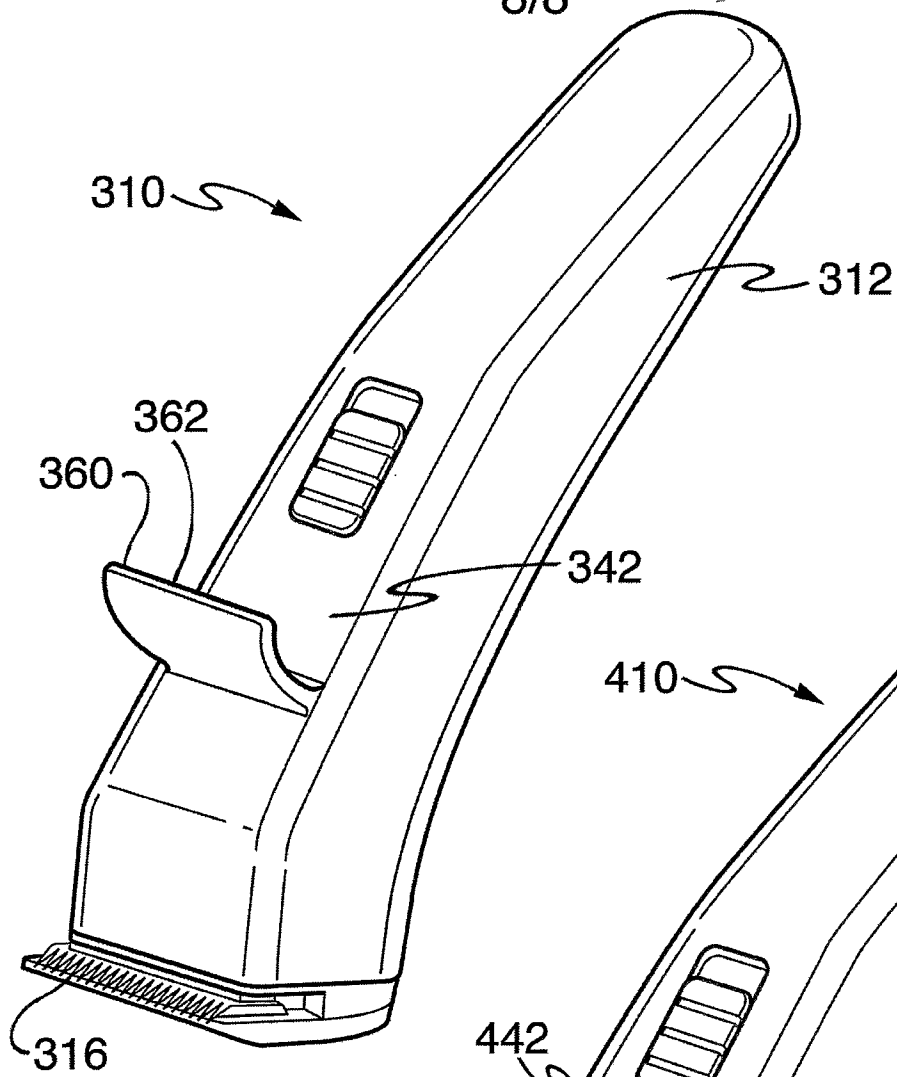


FIG. 19

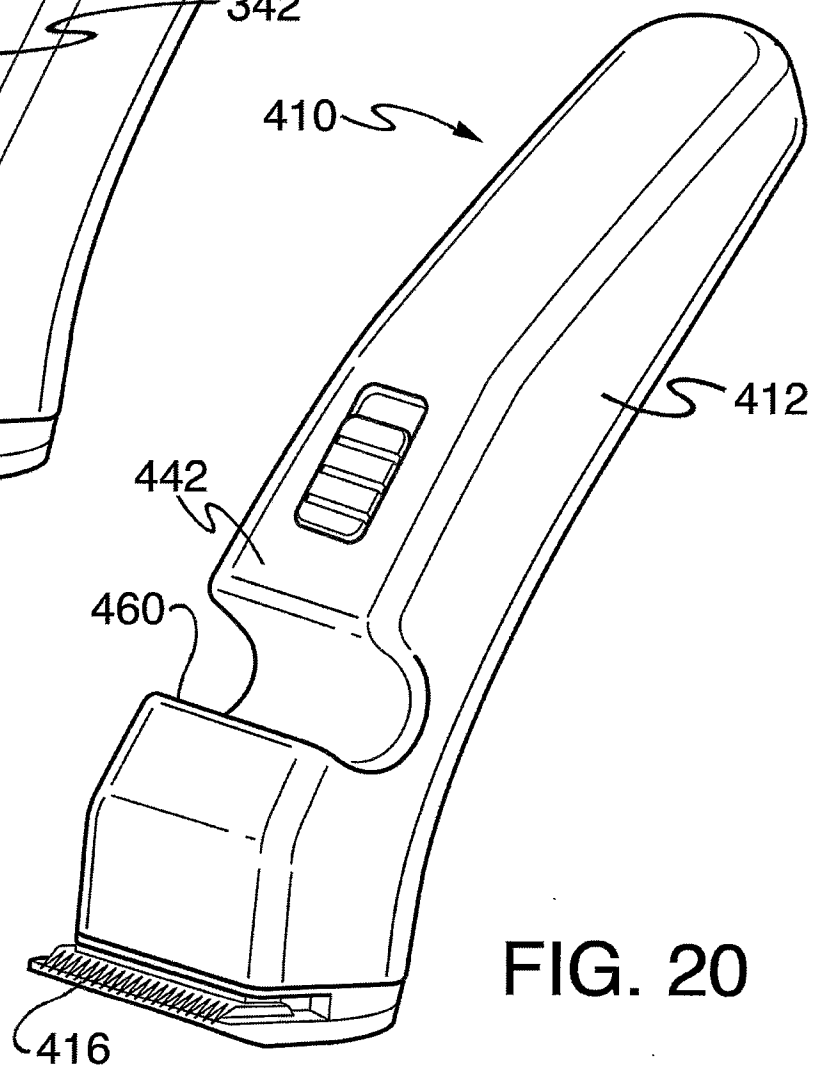


FIG. 20

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 16/24965

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B26B 19/00, B26B 19/38, B26B 19/02, B26B 19/14, B26B 19/28 (2016.01)

CPC - B26B 19/00, B26B 19/28, Y10T16/476, Y10S16/19, Y10S16/12, B26B19/3873, B26B19/3853, B26B19/3846, B26B19/28

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC (8): B26B 19/00 (2016.01)

CPC: B26B 19/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
CPC: B26B19/06 (keyword limited; terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PatBase; Google Web; Google Patents

Search Terms Used: Razor, shaver, clipper, cutter, finger, rest, hand, grip, protrusion, holder, shelf, projection, swelling, protuberance, bump, outthrust, prominence, trimmer, blade, cut, hair, fur, guard, remove

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	WO 2015/020696 A1 (SKULL SHAVER, LLC) 12 February 2015 (12.02.2015), entire document, especially fig. 8-13; page 4, ln 24-26; page 5, ln 6-29; page 6, ln 1-20; Claim 6	1-2, 5 ----- 3-4
X	US 8,132,540 B1 (Strebeigh) 13 March 2012 (13.03.2012), entire document, especially fig. 1	6-7
X	US 2016/0008994 A1 (JOHNSON) 14 January 2016 (14.01.2016), entire document, especially fig. 5; para [0029]	6, 8
Y	US 3,010,204 A (Smith) 01 September 1959 (01.09.1959), entire document, especially fig. 1	3
Y •	US D717,493 S (Kulshreshtha) 11 November 2014 (11.11.2014), entire document, especially fig. 5	4
A	US 2015/0040405 A1 (Kulshreshtha) 12 February 2015 (12.02.2015), entire document	1-8
A	US 2013/0212885 A1 (Lyles) 22 August 2013 (22.08.2013), entire document	1-8
A	US 2012/0159795 A1 (Walmsley) 28 June 2012 (28.06.2012), entire document	1-8
A	US 2013/0255455 A1 (McCue) 03 October 2013 (03.10.2013), entire document	1-8
A	US 2012/0279073 A1 (Snow et al.) 08 November 2012 (08.11.2012), entire document	1-8

☒ Further documents are listed in the continuation of Box C.

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Date of the actual completion of the international search

15 May 2016 (15.05.2016)

Date of mailing of the international search report

24 JUN 2016

Name and mailing address of the ISA/US

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Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 16/24965

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2008/0115736 A1 (Porter et al.) 22 May 2008 (22.05.2008), entire document	1-8
A	US 2005/0246906 A1 (Greene) 10 November 2005 (10.11.2005), entire document	1-8
A	US 8,782,911 B1 (Greene) 22 July 2014 (22.07.2014), entire document	1-8
A	US 4,542,585 A (Ito et al.) 24 September 1985 (24.09.1985), entire document	1-8