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(54) **GROOMING DEVICE FOR ANIMALS WITH ASYNCHRONOUS INTERMITTENT LIGHT EXPOSURE**

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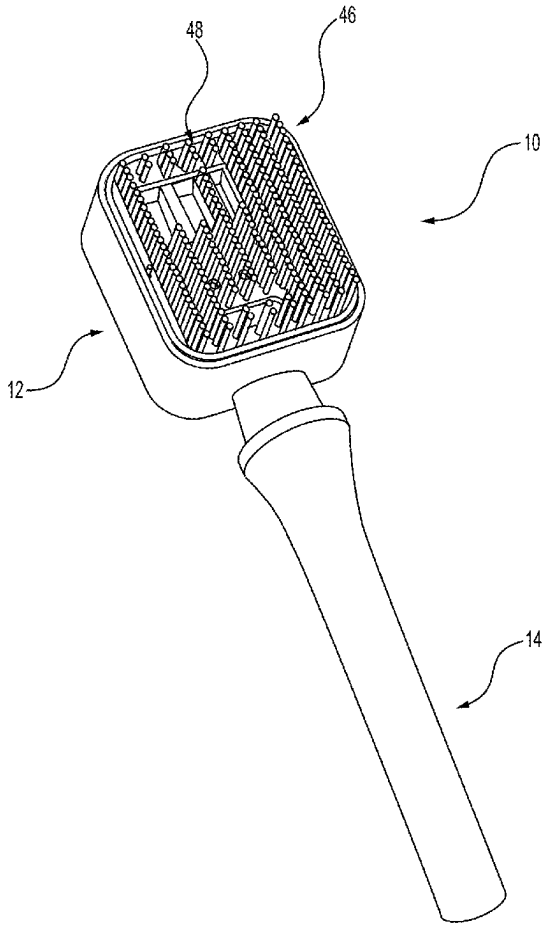
(57) **ABSTRACT**

The grooming device for animals with asynchronous intermittent light exposure combines a grooming tool for an animal with asynchronous intermittent light therapy. The grooming device includes a head portion and a handle portion attached to the head portion. The head portion includes a hollow housing having an upper wall, a lower wall and at least one sidewall. The upper wall has a light exposure aperture formed therethrough. A plurality of light sources are received within the hollow housing. Each of the light sources produces light in a unique wavelength range. The plurality of light sources are positioned within the hollow housing such that the light generated thereby passes through the light exposure aperture. A grooming accessory is releasably attached to the head portion. A controller is configured to actuate selected ones of the plurality of light sources at preselected times with respect to one another and for preselected intervals.



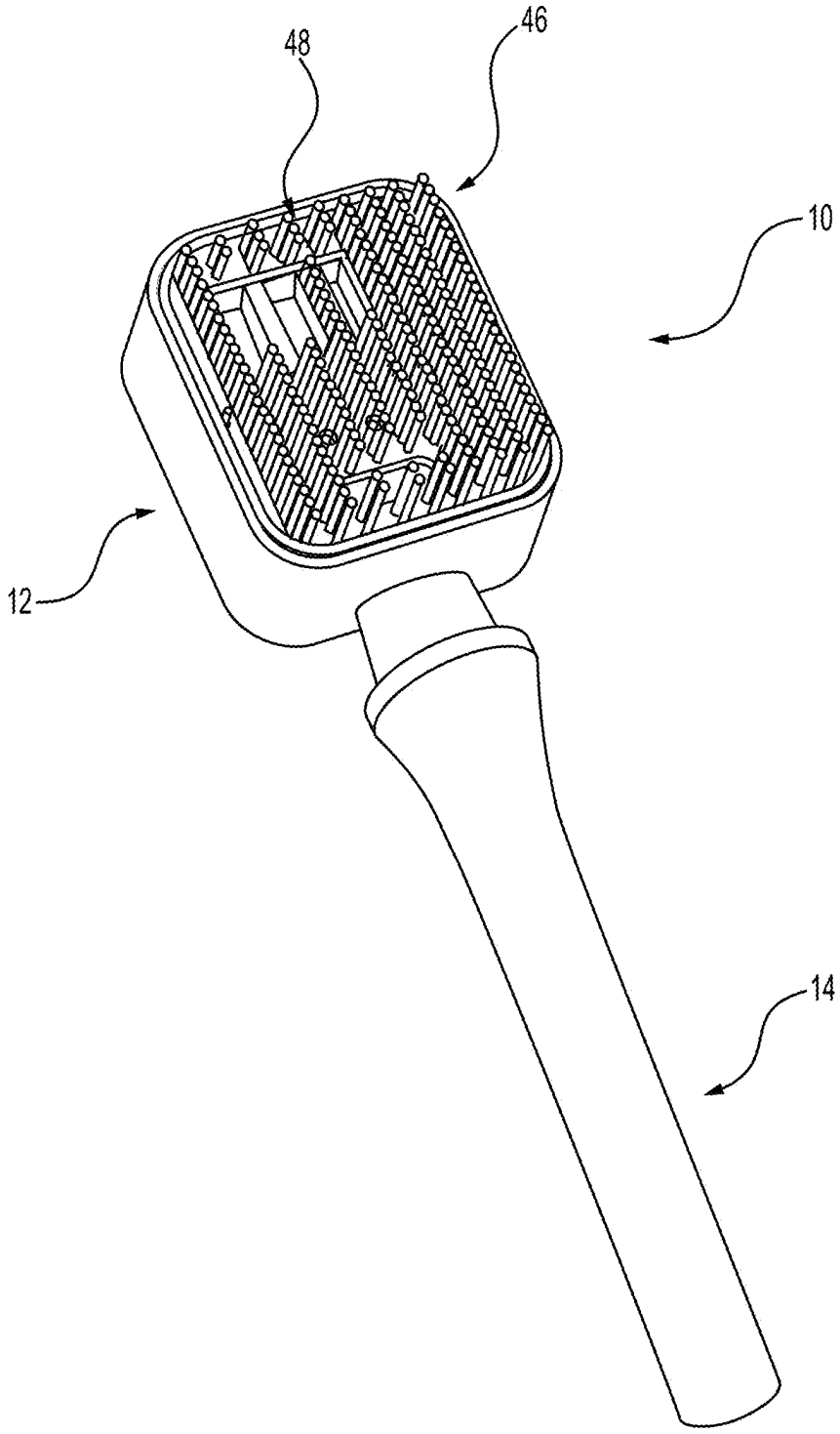


FIG. 1

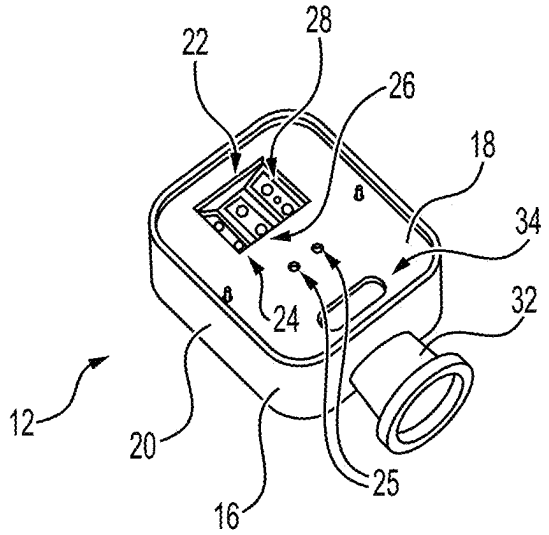


FIG. 2A

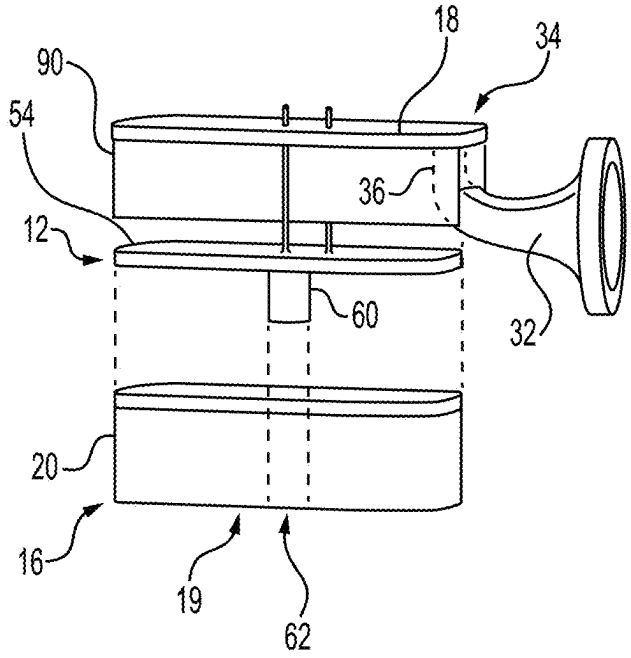


FIG. 2B

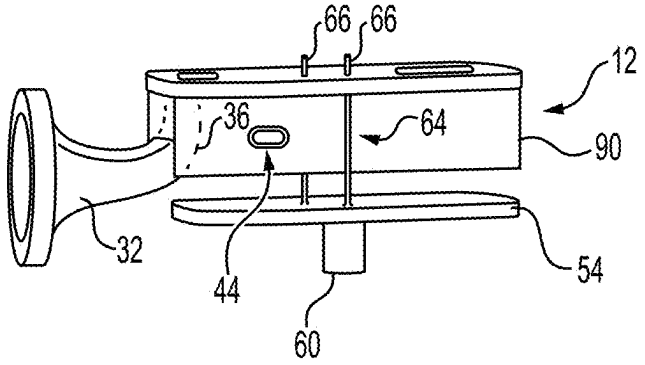


FIG. 2C

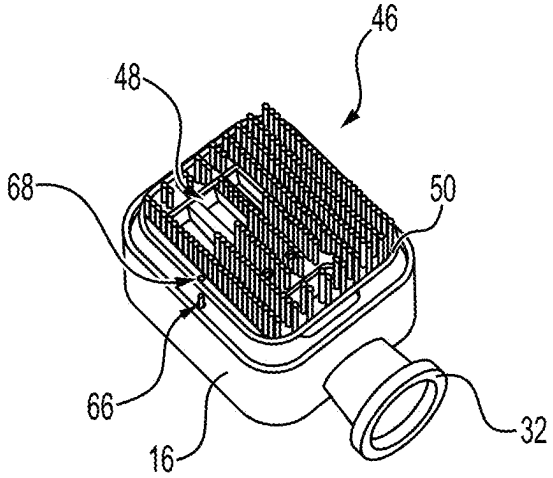


FIG. 3A

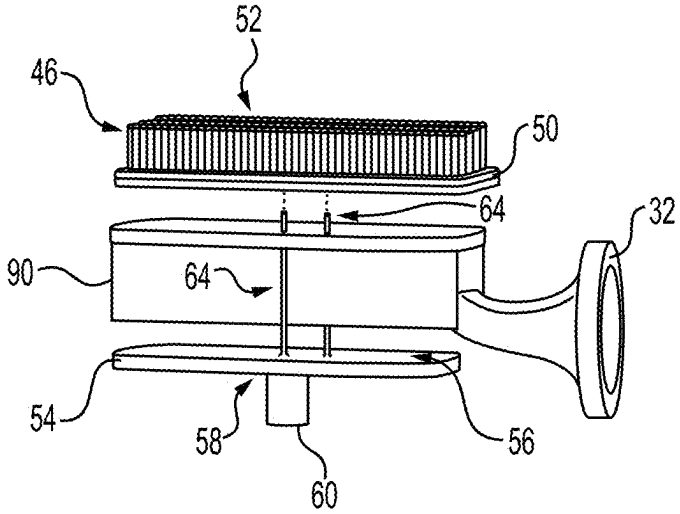


FIG. 3B

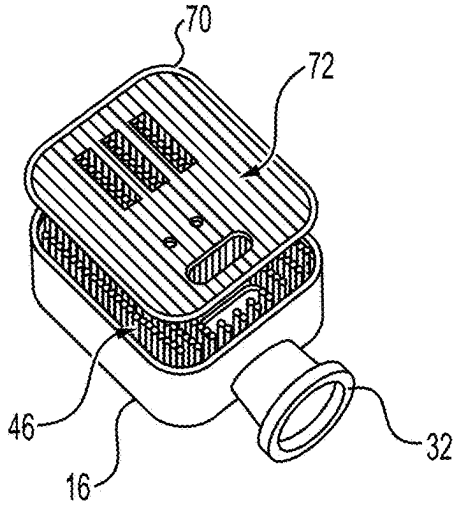


FIG. 4A

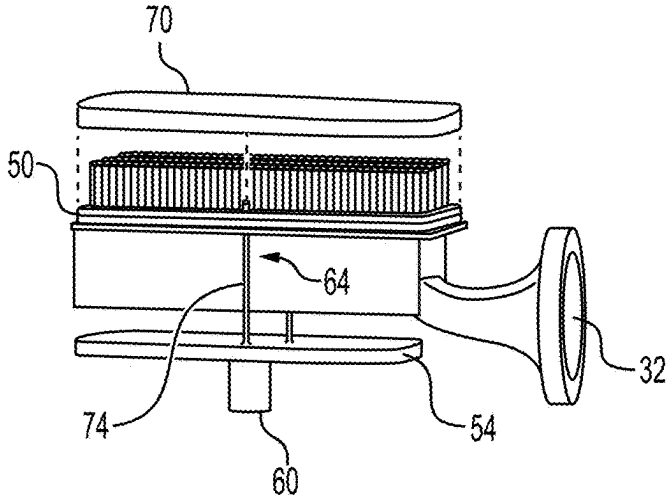


FIG. 4B

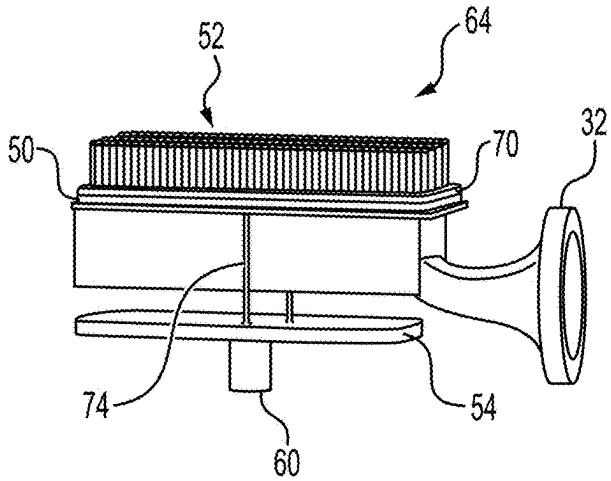


FIG. 4C

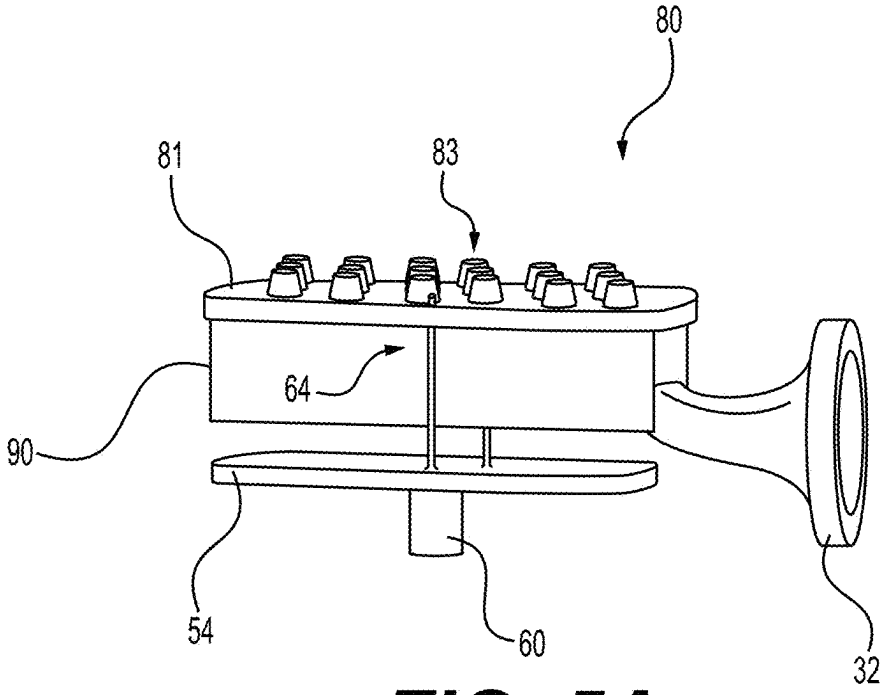


FIG. 5A

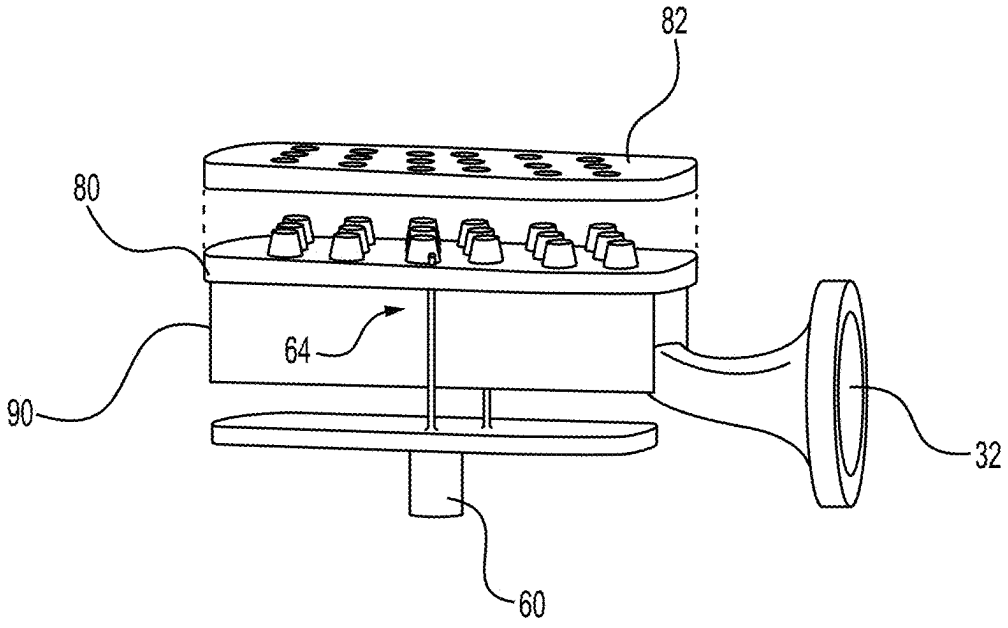


FIG. 5B

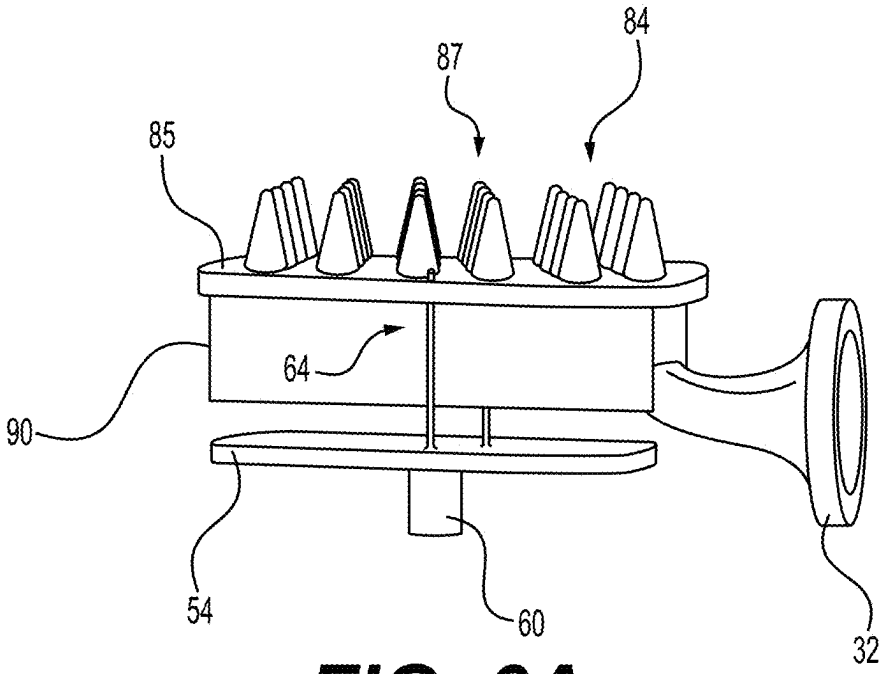


FIG. 6A

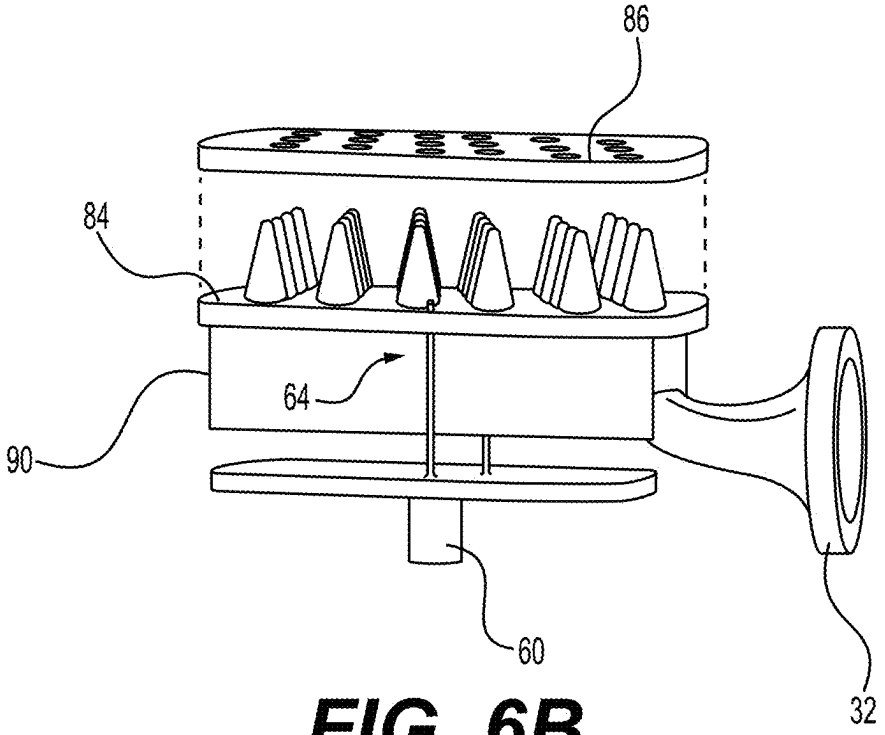


FIG. 6B

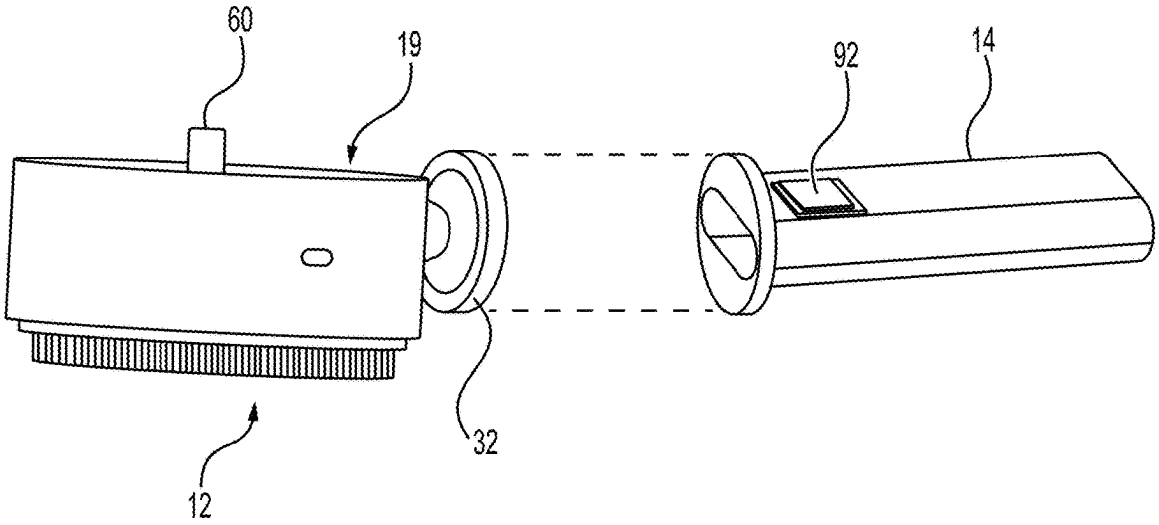


FIG. 7A

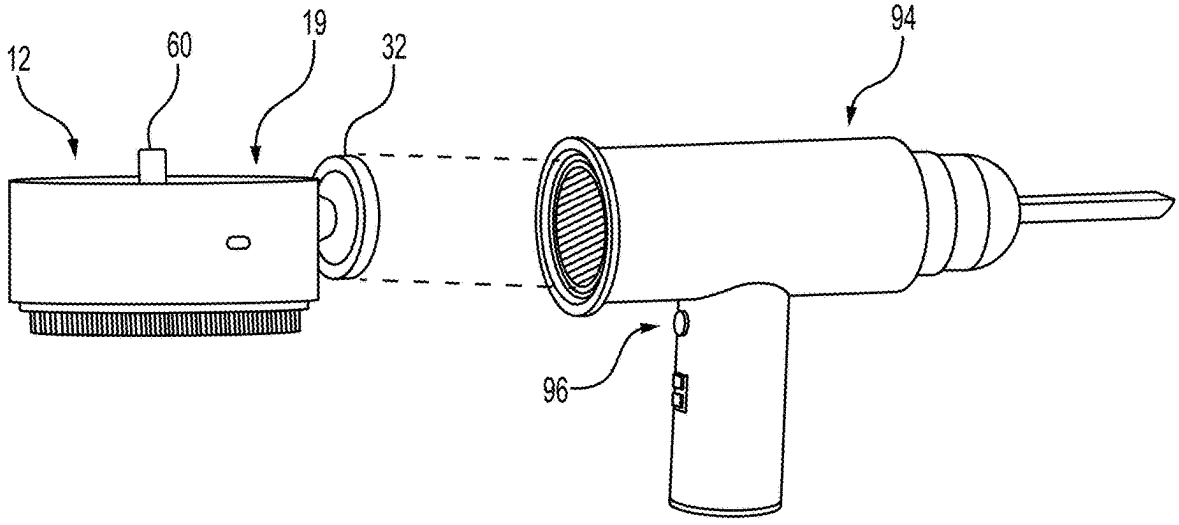


FIG. 7B

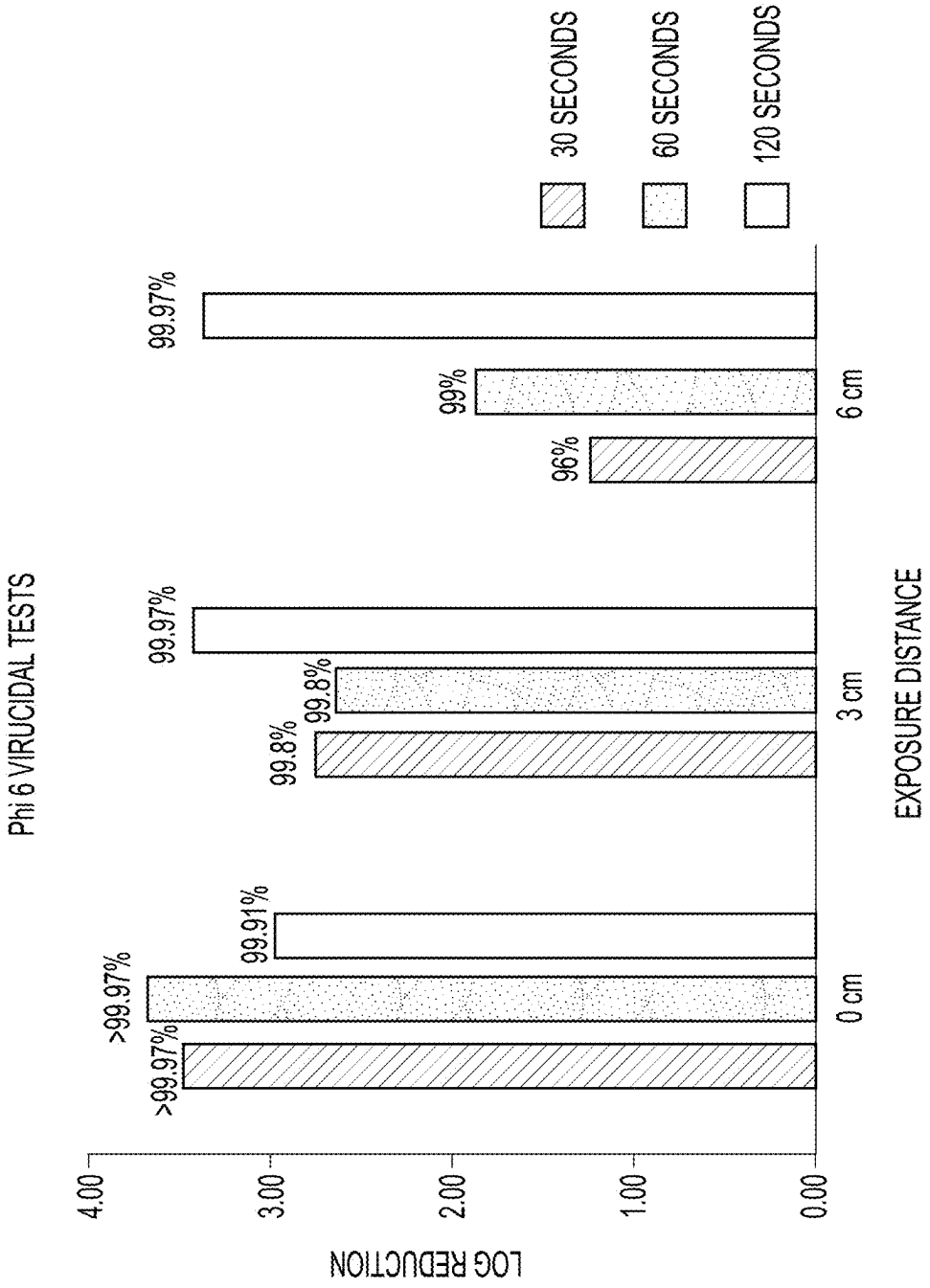

Phi 6 VIRUCIDAL TESTS
LOG REDUCTION
4.00
3.00
2.00
1.00
0.00
30 SECONDS
60 SECONDS
120 SECONDS
>99.97%
>99.97%
99.91%
99.8%
99.8%
99.97%
99.97%
96%
99%
99.97%
0 cm
3 cm
6 cm
EXPOSURE DISTANCE

FIG. 8

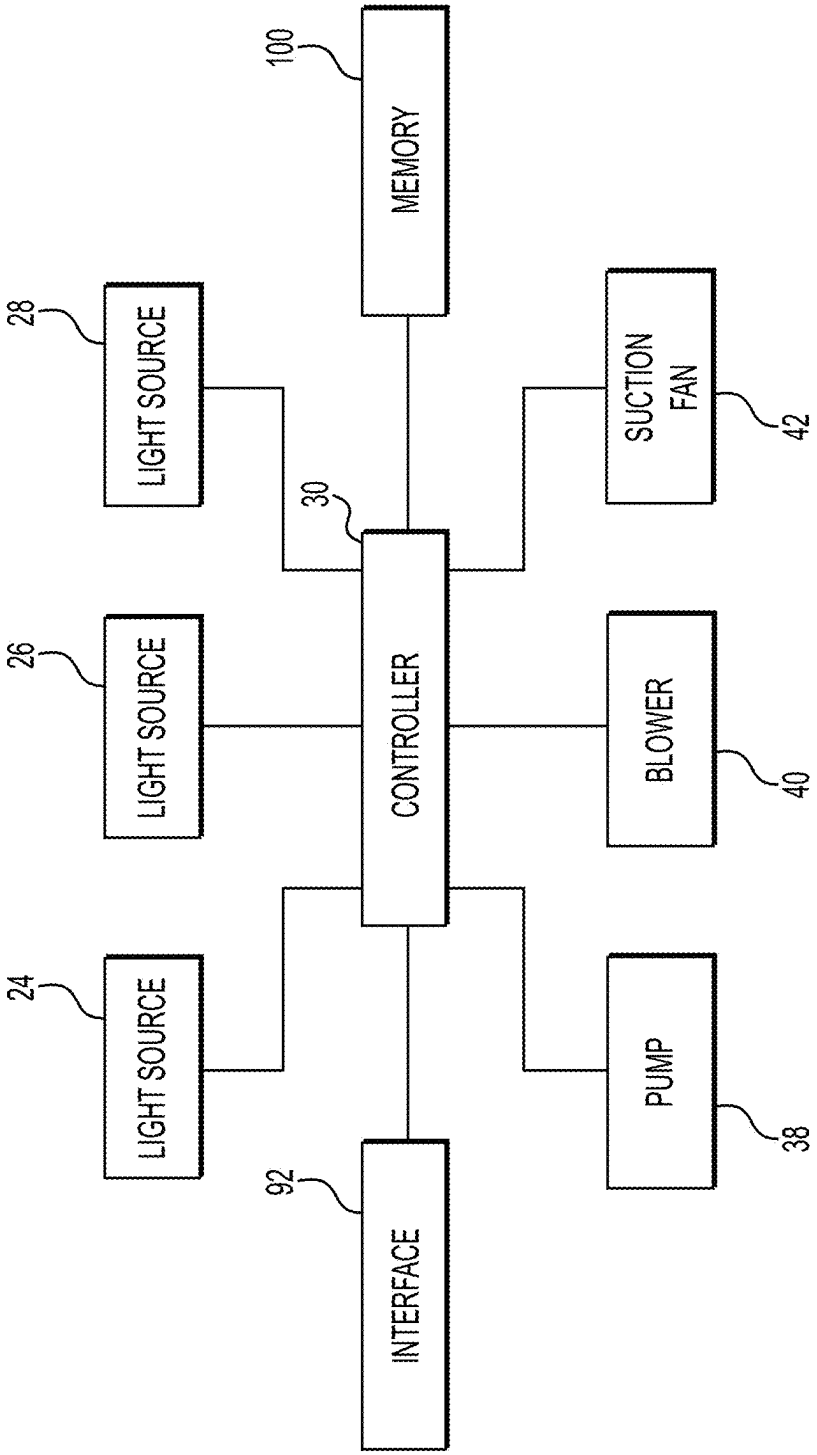

100
MEMORY
28
LIGHT SOURCE
30
SUCTION FAN
42
26
LIGHT SOURCE
CONTROLLER
BLOWER
40
24
LIGHT SOURCE
PUMP
38
92
INTERFACE

FIG. 9

GROOMING DEVICE FOR ANIMALS WITH ASYNCHRONOUS INTERMITTENT LIGHT EXPOSURE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Patent Application No. 63/555,909, filed on Feb. 21, 2024.

BACKGROUND

Field

[0002] The disclosure of the present patent application relates to animal grooming and care, and particularly to a grooming device for animals which also treats microbial infection and pest infestation using asynchronous light exposure.

Description of Related Art

[0003] Caring for an animal's coat and skin is of critical importance for the overall health and well-being of the animal. Various harmful microbes, including bacteria, fungi, mold and viruses, can infect an animal's skin, leading to infection and disease. Animals also experience irritation and potential health risks due to infestation by various types of pests, such as fleas, ticks and lice. The bites of such pests can potentially lead to anemia, the transmission of parasites (e.g., tapeworms), and the transmission of diseases, such as Bartonellosis.

[0004] Caring for an animal's coat of fur is also important for the animal's overall health, since infestations of the coat can not only cause the coat to become dull, matted and unmanageable, but can also lead to physical discomfort for the animal. Additionally, mange, for example, which is caused by mite infestation, results in scratching and biting, potentially leading to open sores and infections. In addition to the health of the animal, the presence of microbial life and pests in an animal's coat and on its skin can pose a risk to human health. Fleas and ticks, for example, can be transferred from animals to humans.

[0005] Although treatment of various skin conditions of animals is common, as is general grooming and cleaning of animals, the two are typically considered separate care-related activities, not only performed at different times but by different professionals. If the two could be easily combined, it would save time, money and potentially provide the animal with quicker relief. Additionally, treatment of microbial infections and pests is typically performed using chemicals and/or pharmaceuticals. Both types of treatments are not only costly but can be potentially harmful to the animal due to misapplication, allergic reactions, and side-effects. Thus, a grooming device for animals with asynchronous intermittent light exposure solving the aforementioned problems is desired.

SUMMARY

[0006] The grooming device for animals with asynchronous intermittent light exposure combines a grooming tool for an animal, such as a brush for a dog or cat's fur, as a non-limiting example, with asynchronous intermittent light therapy for treating microbial growth, repelling pests, such as ticks and fleas, and promoting healthy skin and fur. The grooming device includes a head portion and a handle portion which is attached to the head portion. The head portion includes a hollow housing having an upper wall, a lower wall and at least one sidewall. The upper wall has a light exposure aperture formed therethrough. A plurality of light sources are received within the hollow housing. Each of the light sources produces light in a unique wavelength range. The plurality of light sources are positioned within the hollow housing such that the light generated thereby passes through the light exposure aperture. A grooming accessory is releasably attached to the head portion. The grooming device further includes a controller configured to actuate selected ones of the plurality of light sources at preselected times with respect to one another and for preselected intervals.

[0007] As a non-limiting example, the light sources may be configured to generate light in any of the following wavelength ranges, although each light source generates light in a wavelength range unique from the others: ultraviolet (200±20 nm, 225±20 nm, 250±20 nm, 285±20 nm, 365±20 nm, 385±20 nm, 395±20 nm, 405±20 nm), blue (450±20 nm, 495±20 nm), green (525±20 nm, 570±20 nm), red and near infrared (630±20 nm, 650±20 nm, 700±20 nm, 800±20 nm, 850±20 nm). The light sources may be any suitable type of light sources that can supply high intensity light within narrow wavelength ranges, including, as non-limiting examples, light emitting diodes (LEDs), lasers and laser diodes. The short wavelength ranges, including ultraviolet and blue light, are effective in disinfecting microbes and repelling pests, such as fleas, ticks, mites and lice. Green light is known to treat dilated capillaries and promote skin healing. Red light and near infrared light warm the skin and promote blood circulation. By utilizing the high intensity narrow wavelength lights, the grooming device can effectively target and rapidly eliminate harmful microbes, including viruses, bacteria, fungi and mold, from the animal's skin and coat. This treatment provides a safer alternative to traditional chemical-based treatments that may have harmful side effects on pets.

[0008] Non-limiting examples of grooming accessories which may be used with the plurality of light sources include combs, brushes, rakes, slickers, dryers, vacuums, massagers, liquid sprayers and combinations thereof. In use, the grooming device may be used to, as a non-limiting example, clean, comb and massage the coat and skin. The programmable light sources are synchronized with the grooming process to provide a combination of light wavelengths for each stage of grooming. This ensures that the pet's coat and skin are thoroughly cleaned, disinfected and rid of pests.

[0009] These and other features of the present subject matter will become readily apparent upon further review of the following specification.

BRIEF DESCRIPTION OF DRAWINGS

[0010] FIG. **1** is a perspective view of a grooming device for animals with asynchronous intermittent light exposure.

[0011] FIG. **2**A is a perspective view of a head portion of the grooming device for animals with asynchronous intermittent light exposure.

[0012] FIG. **2**B is a partially-exploded perspective view of the head portion of the grooming device for animals with asynchronous intermittent light exposure.

[0013] FIG. **2**C is a perspective view of the head portion of FIGS. **2**A and **2**B, shown without a hollow housing thereof.

[0014] FIG. **3**A is a perspective view of the head portion of FIGS. **2**A and **2**B shown with a brush being attached thereto.

[0015] FIG. **3**B is a perspective view of the partial head portion of FIG. **2**C shown with the brush being attached thereto.

[0016] FIG. **4**A is a perspective view of the head portion and the brush with a fur removal plate being attached thereto.

[0017] FIG. **4**B is a perspective view of the partial head portion of FIG. **2**C with the brush, shown with the fur removal plate being attached thereto.

[0018] FIG. **4**C is a perspective view of the partial head portion of FIG. **2**C with the brush and fur removal plate attached thereto.

[0019] FIG. **5**A is a perspective view of the partial head portion of FIG. **2**C shown with a massager attached thereto.

[0020] FIG. **5**B is a perspective view of the partial head portion and the massager of FIG. **5**A, shown with a stabilizing plate being attached thereto.

[0021] FIG. **6**A is a perspective view of the partial head portion of FIG. **2**C shown with an alternative massager attached thereto.

[0022] FIG. **6**B is a perspective view of the partial head portion and the alternative massager of FIG. **6**A, shown with a stabilizing plate being attached thereto.

[0023] FIG. **7**A is a partially exploded view of the grooming device for animals with asynchronous intermittent light exposure.

[0024] FIG. **7**B is a partially exploded view of an alternative configuration of the grooming device for animals with asynchronous intermittent light exposure.

[0025] FIG. **8** is a graph showing disinfection results for disinfection of a sample of Phi 6 bacteriophage using the grooming device for animals with asynchronous intermittent light exposure.

[0026] FIG. **9** is a block diagram showing system components of the grooming device for animals with asynchronous intermittent light exposure.

[0027] Similar reference characters denote corresponding features consistently throughout the attached drawings.

DETAILED DESCRIPTION

[0028] The grooming device for animals with asynchronous intermittent light exposure **10** combines a grooming tool for an animal, such as a brush for a dog or cat's fur, as a non-limiting example, with asynchronous intermittent light therapy for treating microbial growth, repelling pests, such as ticks and fleas, and promoting healthy skin and fur. As shown in FIG. **1**, the grooming device **10** includes a head portion **12** and a handle portion **14** which is attached to the head portion **12**. As shown in FIGS. **2**A and **2**B, the head portion **12** includes a hollow housing **16** having an upper wall **18**, a lower wall **19** and at least one sidewall **20**. Although the hollow housing **16** is shown as having a substantially rectangular shape in the non-limiting example of FIGS. **1**, **2**A and **2**B, it should be understood that hollow housing **16** and head portion **12** may have any suitable shape and relative dimensions.

[0029] As shown in FIG. **2**A, the upper wall **18** has a light exposure aperture **22** formed therethrough. A plurality of light sources **24**, **26**, **28** are received within the hollow housing **16**. Although the non-limiting example of FIG. **2**A shows three such light sources **24**, **26**, **28**, it should be understood that any suitable number of light sources may be provided. As shown in FIG. **2**A, one or more additional light sources **25** may also be added, as desired. Each of the light sources **24**, **26**, **28** produces light in a unique wavelength range. As a non-limiting example, light sources **24**, **26**, **28** may be configured to generate light in any of the following wavelength ranges, although each light source should generate light in a wavelength range unique from the others: ultraviolet (200±20 nm, 225±20 nm, 250±20 nm, 285±20 nm, 365±20 nm, 385±20 nm, 395±20 nm, 405±20 nm), blue (450±20 nm, 495±20 nm), green (525±20 nm, 570±20 nm), red and near infrared (630±20 nm, 650±20 nm, 700±20 nm, 800±20 nm, 850±20 nm). It should be understood that light sources **24**, **26**, **28** may be any suitable type of light sources that can supply high intensity light within narrow wavelength ranges, including, as non-limiting examples, light emitting diodes (LEDs), lasers, and laser diodes.

[0030] The short wavelength ranges, including ultraviolet and blue light, are effective in disinfecting microbes and repelling pests, such as fleas, ticks, mites and lice. Green light is known to treat dilated capillaries and promote skin healing. Red light and near infrared light warm the skin and promote blood circulation. By utilizing the high intensity narrow wavelength lights, grooming device **10** can effectively target and rapidly eliminate harmful microbes, including viruses, bacteria, fungi and mold, from the animal's skin and coat. This treatment provides a safer alternative to traditional chemical-based treatments that may have harmful side effects on pets.

[0031] The plurality of light sources **24**, **26**, **28** are positioned within the hollow housing **16** such that the light generated thereby passes through the light exposure aperture **22**. As will be discussed in greater detail below, a grooming accessory is releasably attached to the head portion **12**. Non-limiting examples of grooming accessories which may be used with the plurality of light sources **24**, **26**, **28** include combs, brushes, rakes, slickers, dryers, vacuums, massagers, liquid sprayers and combinations thereof. In use, the grooming device **10** may be used to, as a non-limiting example, clean, comb and massage the coat and skin. The programmable light sources **24**, **26**, **28** are synchronized with the grooming process to provide a combination of light wavelengths for each stage of grooming. This ensures that the pet's coat and skin are thoroughly cleaned, disinfected and rid of pests.

[0032] The grooming device **10** further includes a controller **30** configured to actuate selected ones of the plurality of light sources **24**, **26**, **28** at preselected times with respect to one another and for preselected intervals. The controller **30** may be pre-programmed, with instructions stored in non-transitory computer readable memory **100**, to control and adjust the light intensity, pulse the light, and provide asynchronous intermittent lighting. It should be understood that controller **30** may be any suitable type of controller, such as a microprocessor, a programmable logic controller, control circuitry or the like.

[0033] The handle portion **14** may be releasably attached to the head portion **12** using any suitable type of releasable attachment, such as, but not limited to, magnetic attachments, clamps, clips, snap fasteners or the like. As shown in FIGS. **2**A, **2**B and **2**C, the head portion **12** includes a hollow

connection portion **32** for releasable attachment to the handle portion **14**. It should be understood that the shape and relative dimensions of the hollow connection portion **32** are shown for exemplary purposes only and may be varied dependent upon the particular size, shape and style of handle portion **14**. As shown in FIGS. **2**A and **2**B, the upper wall **18** of the hollow housing **16** has a fluid port **34** formed therein, and the fluid port **34** is in fluid communication with the hollow connection portion **32**. As a non-limiting example, handle portion **14** may be equipped with a reservoir containing water, essential oils, or any other desired fluid. Handle portion **14** may also include a pump **38** which, under control of controller **30**, is adapted for selectively pumping the fluid from the reservoir, through the hollow connection portion **32** and through the fluid port **34** (via a connecting conduit **36**). Thus, the fluid may be applied to the pet during grooming for, as a non-limiting example, washing the animal's fur or rinsing a cleaning agent from the animal's fur.

[0034] As another non-limiting example, the handle portion **14** may be equipped with a blower **40** in communication with the controller **30**. The blower **40** is adapted for selectively and controllably blowing air through the hollow connection portion **32** and the fluid port **34** (via the connecting conduit **36**). As shown in FIGS. **7**A, the head portion **12** may be connected to a different handle portion dependent upon the desired need. In the non-limiting example of FIG. **7**A, handle portion **14** contains the fluid reservoir and pump **38** for supplying a fluid, with actuation and/or programming being implemented via a user interface **92** (shown in the non-limiting example of FIG. **7**A as a simple button). The handle portion **14** may be removed and replaced with the handle portion **94** of FIG. **7**B which, as a non-limiting example, may be configured similar to a conventional hair dryer, also programmed and/or actuated by user interface **96** in communication with controller **30**. The hair dryer type handle portion **94** includes a blower for delivering heated or cooled air. Handle portion **94** may be used to, as a non-limiting example, dry the animal's fur. As a further non-limiting example, the handle portion may be equipped with a suction fan **42** for vacuuming shed fur and the like. It should be understood that user interfaces **92**, **96** may be any suitable type of user interface, including, but not limited to, buttons, keys, switches, wireless interfaces and/or wireless devices, or the like.

[0035] FIGS. **2**B-**4**C illustrate a non-limiting example in which the grooming accessory is a brush **46** which, as shown in FIGS. **3**A and **3**B, includes a bristle plate **50** releasably attached to the hollow housing **16** and a plurality of bristles **52** fixed to, and projecting from, the bristle plate **50**. The bristle plate **50** has a light exposure opening **48** formed therethrough which is aligned with the light exposure aperture **22** formed through upper wall **18** when the bristle plate **50** is releasably attached to the hollow housing **16**. This allows the light sources **24**, **26**, **28** to operate and project light when the brush **46** is attached to the head portion **12**. The bristle plate **50**, and any other grooming accessories, may be releasably attached to head portion **12** using any suitable type of releasable attachment, such as magnetic attachment, clips, clasps or the like. It should be understood that the size, relative dimensions and overall style of brush **46** are shown for exemplary purposes only.

[0036] As shown in FIGS. **2**B, **2**C and **3**B, a pusher plate **54** may be received within the hollow housing **16**. The pusher plate **54** has opposed upper and lower surfaces **56**, **58**, respectively. A push button **60** is secured to the lower surface **58** of the pusher plate **54**, and the lower wall **19** of the hollow housing **16** has a button opening **62** formed therethrough such that the push button **60** projects outwardly through the button opening **62**, as shown in FIGS. **7**A and **7**B. It should be understood that the shape and relative dimensions of push button **60** are shown for exemplary purposes only. A pair of rods **64** is provided, with each rod **64** having opposed upper and lower ends. The lower ends thereof are secured to the upper surface **56** of the pusher plate **54**, and the upper ends **66** are respectively slidably received through a pair of passages **68** formed through the bristle plate **50** (see FIG. **3**A). In FIGS. **2**B, **2**C and **3**B, the electronics, including light sources **24**, **26**, **28**, are contained within an enclosure **90** to provide protection for the electronics. The light sources **24**, **26**, **28** and other electronic components may be powered by, for example, a rechargeable battery, also received within enclosure **90**, and which may be recharged via a charging port **44**.

[0037] As shown in FIGS. **4**A, **4**B and **4**C, a fur removal plate **70** may be provided. The fur removal plate **70** has a plurality of slots **72** formed therethrough. The plurality of bristles **52** are slidably received through the slots **72** and the fur removal plate **70** is releasably attached to the upper ends **66** of the pair of rods **64** using a magnetic attachment or the like. FIG. **4**C shows the fur removal plate **70** when it is not in use. In this configuration, the fur removal plate **70** is seated on the bristle plate **50**, with the bristles **52** fully extending through slots **72**. When the user wishes to remove fur from bristles **52**, the user pushes the pusher plate **54** upward via the push button **60**. This causes the rods **64** to rise with respect to hollow housing **16** which, in turn, pushes the fur removal plate **70** with respect to the bristle plate **50**. The bristles **50** slide through the slots **72** as the fur removal plate **70** rises, thus pushing trapped fur upward, along the length of the bristles. As shown in FIGS. **4**B and **4**C, the rods **64** may be spring biased by a pair of springs **74** respectively wrapped around the pair of rods **64** between the pusher plate **54** and the upper wall **18** of the hollow housing **16**.

[0038] FIGS. **5**A and **5**B illustrate another non-limiting example of a removable grooming accessory. In this non-limiting example, the grooming accessory is a massager **80**, including a plate **81** with a plurality of projecting massage elements **83**. The plate **81** may be releasably attached to head portion **12** using any suitable type of releasable attachment, such as a magnetic attachment, clips, clasps or the like. As shown in FIG. **5**B, an additional stabilizing plate **82**, which includes a plurality of openings for receiving the massage elements **83**, may be attached to plate **81** for holding plate **81** in place and providing stability therefor. As shown, the upper ends of rods **64** may project through plate **81** for attachment to stabilizing plate **82** by magnetic attachment or the like. In use, the stabilizing plate **82** replaces fur removal plate **70** of FIG. **4**B and, in addition to providing stabilization, can further be used for the same fur removal function. As shown, the pusher plate **54**, push button **60** and rods **64** remain and may be used in a manner similar to their use with the fur removal plate **70**.

[0039] FIGS. **6**A and **6**B illustrate another non-limiting example of a massager **84**, which is substantially similar to massager **80**, including a plate **85**, massage elements **87** and a stabilizing plate **86**. As shown, massage elements **87** have a different shape and relative dimensions compared with massage elements **83**. It should be understood that the

massage elements **83**, **87** may have any suitable shape and relative dimensions, and may be provided in any suitable number and arrangement. Similar to stabilizing plate **82**, the stabilizing plate **86** may also be used in conjunction with the pusher plate **54**, push button **60** and rods **64** for fur removal.

[0040] FIG. **8** illustrates the usage of grooming device **10** to disinfect a sample infected with the Phi 6 bacteriophage. Three light sources **24**, **26**, **28** were used in the test, operating in the following respective wavelength ranges: 285±20 nm (ultraviolet), 405±20 nm (ultraviolet), and 450±20 nm (blue). Controller **30** was programmed to operate light sources **24**, **26**, **28** as follows: for each cycle of 60 seconds, the 405±20 nm and 285±20 nm light sources were active for the first 48 seconds. These light sources were then deactivated and the 450±20 nm was activated for the last 12 seconds. The cycle was then repeated. As shown in FIG. **8**, the greatest disinfection rates occurred at a treatment distance of 0 cm between the device and the sample with a treatment time of 60 seconds, and at distances of 3 cm and 6 cm, each with a treatment time of 120 seconds.

[0041] Additional testing of grooming device **10** was performed to test disinfection of samples of the MS2 bacteriophage, *E. coli* bacteria and *S. aureus* bacteria. The wavelength ranges and cycle discussed above with reference FIG. **8** was used for these disinfection tests and the log reductions and disinfection percentages for each are presented below in Table 1.

TABLE 1

Virucidal and Bactericidal Performance

		MS2		*E. coli*		*S. aureus*	
Distance (cm)	Exposure time (s)	Log red.	%	Log red.	%	Log red.	%
0	30 s	1.29	94.9	3.19	>99.9	3.08	>99.9
	60 s	1.84	98.6	3.29	>99.9	3.15	>99.9
	120 s	2.08	99.2	3.25	>99.9	3.25	>99.9
3	30 s	0.50	68.4	3.19	>99.9	2.40	99.6
	60 s	1.06	91.3	3.13	>99.9	2.99	99.9
	120 s	1.33	95.3	3.25	>99.9	3.25	>99.9
6	30 s	0.26	45.0	0.93	88.3	0.24	42.4
	60 s	0.75	82.2	2.61	99.8	1.87	98.6
	120 s	0.68	79.1	2.61	99.8	2.81	99.8

[0042] Although the above combination used for testing included two ultraviolet wavelength ranges and a blue wavelength range, it should be understood that any suitable combination of wavelength ranges may be used. As a non-limiting example, a combination of ultraviolet, blue and green lights, under the programmable control of controller **30**, can provide microbial disinfection, promote healthy skin and enhance wound healing. As another non-limiting example, a combination of ultraviolet, blue and red/infrared lights, under the programmable control of controller **30**, can provide microbial disinfection, improve blood circulation and promote a healthy fur and coat. As a further non-limiting example, a combination of ultraviolet and deep blue lights, under the programmable control of controller **30**, can provide microbial disinfection and pest repellence. As another non-limiting example, a combination of ultraviolet, deep blue and green lights, under the programmable control of controller **30**, can provide microbial disinfection, pest repellence, promote healthy skin, and enhance wound healing. As a further non-limiting example, a combination of ultraviolet, deep blue and red/infrared lights, under the programmable control of controller **30**, can provide microbial disinfection, pest repellence, improve blood circulation and promote healthy fur and coat. As another non-limiting example, a combination of ultraviolet, deep blue, green and red/infrared lights, under the programmable control of controller **30**, can provide microbial disinfection, pest repellence, enhance healthy skin, improve blood circulation and promote a healthy fur and coat.

[0043] As a non-limiting example, a variety of different grooming devices **10** may be manufactured, each including a different combination of light sources. As a further non-limiting example, the grooming device **10** may include all of the above different light sources, with controller **30** being programmed to make use the particular combinations of lights for desired results.

[0044] It is to be understood that the grooming device for animals with asynchronous intermittent light exposure is not limited to the specific embodiments described above, but encompasses any and all embodiments within the scope of the generic language of the following claims enabled by the embodiments described herein, or otherwise shown in the drawings or described above in terms sufficient to enable one of ordinary skill in the art to make and use the claimed subject matter.

1. A grooming device for animals with asynchronous intermittent light exposure, comprising:

a head portion comprising:

a hollow housing having an upper wall, a lower wall and at least one sidewall, the upper wall having a light exposure aperture formed therethrough; and

a plurality of light sources received within the hollow housing, wherein each of the light sources produces light with a unique wavelength range, the plurality of light sources being positioned within the hollow housing such that the light generated thereby passes through the light exposure aperture;

a handle portion attached to the head portion;

a grooming accessory releasably attached to the head portion; and

a controller configured to actuate selected ones of the plurality of light sources at preselected times with respect to one another and for preselected intervals.

2. The grooming device for animals with asynchronous intermittent light exposure as recited in claim **1**, wherein the handle portion is releasably attached to the head portion.

3. The grooming device for animals with asynchronous intermittent light exposure as recited in claim **2**, wherein the head portion comprises a hollow connection portion for releasable attachment to the handle portion.

4. The grooming device for animals with asynchronous intermittent light exposure as recited in claim **3**, wherein the upper wall of the hollow housing has a fluid port formed therein, the hollow connection portion being in fluid communication with the fluid port.

5. The grooming device for animals with asynchronous intermittent light exposure as recited in claim **4**, further comprising a pump in communication with the controller, the pump being adapted for selectively and controllably pumping a fluid through the hollow connection portion and the fluid port.

6. The grooming device for animals with asynchronous intermittent light exposure as recited in claim **4**, further comprising a blower in communication with the controller,

the blower being adapted for selectively and controllably blowing air through the hollow connection portion and the fluid port.

7. The grooming device for animals with asynchronous intermittent light exposure as recited in claim **4**, further comprising a suction fan in communication with the controller, the suction fan being adapted for selectively and controllably sucking air through the fluid port and the hollow connection portion.

8. The grooming device for animals with asynchronous intermittent light exposure as recited in claim **1**, wherein the grooming accessory comprises a brush.

9. The grooming device for animals with asynchronous intermittent light exposure as recited in claim **8**, wherein the brush comprises:

a bristle plate releasably attached to the hollow housing; and

a plurality of bristles fixed to, and projecting from, the bristle plate,

wherein the bristle plate has a light exposure opening formed therethrough, the light exposure opening being aligned with the light exposure aperture when the bristle plate is releasably attached to the hollow housing.

10. The grooming device for animals with asynchronous intermittent light exposure as recited in claim **9**, further comprising:

a pusher plate received within the hollow housing, the pusher plate having opposed upper and lower surfaces;

a push button secured to the lower surface of the pusher plate, wherein the lower wall of the hollow housing has a button opening formed therethrough such that the push button projects outwardly through the button opening;

a pair of rods each having opposed upper and lower ends, the lower ends thereof being secured to the upper surface of the pusher plate, the upper ends thereof being respectively slidably received through a pair of passages formed through the bristle plate; and

a fur removal plate having a plurality of slots formed therethrough, the plurality of bristles being slidably received through the slots, and the fur removal plate being releasably attached to the upper ends of the pair of rods, whereby pushing the pusher plate via the push button pushes the fur removal plate with respect to the bristle plate.

11. The grooming device for animals with asynchronous intermittent light exposure as recited in claim **10**, further comprising a pair of springs wrapped around the pair of rods between the pusher plate and the upper wall of the hollow housing.

12. The grooming device for animals with asynchronous intermittent light exposure as recited in claim **1**, wherein the grooming accessory comprises a massager.

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