hair group when the above-mentioned hair care equipment is moved to the hair-ends side from the root side of the above-mentioned hair group at 100 mm/sec in speed is less than more than 0.5N10.0N.

[0020]

If it is in the hair care method based on the above-mentioned present invention, it is preferable that the temperature of the above-mentioned air current is above 30 degrees C and below 200 degrees C in the nearly tip of the above-mentioned brush hair.

[0021]

If it is in the hair care method based on the above-mentioned present invention, It is preferable that the concentration of either the above-mentioned charged particle of the above-mentioned straight polarity in the above-mentioned air passage from the above-mentioned charged particle generator to the above-mentioned air outlet and the above-mentioned charged particle of the above-mentioned negative polarity is more largely [ than 5000 piece //cm / $^{3}$ ] smaller than 50 million-piece [/cm ] $^{3}$.

[0022]

The hold part which the hair care equipment based on the present invention carries out the opening of the suction opening, and is formed pillar-shaped, The brush section which carries out the opening of the air outlet between the above-mentioned brush hair while connecting with the axial direction of the above-mentioned hold part and setting up many brush hair to a peripheral surface, In hair care equipment provided with the air passage which leads an air current to the above-mentioned air outlet from the above-mentioned suction opening while communicating the inside of the above-mentioned hold part and the above-mentioned brush section and being provided, and the air blower which is arranged in the above-mentioned air passage, While arranging the high-density brush hair line which catches and pulls the hair so that the outside of the above-mentioned brush hair may be surrounded, it is characterized by providing an air outlet to the side part of a high-density brush hair line.

[0023]

When it has its hair cut by a user's ****ing a hold part, sliding the hair on brush hair, and brushing according to such composition, an air blower drives and the open air which flows from a suction opening is emitted from the air outlet which circulates and provides the inside of an air passage between the brush hair lines of a brush section. Since the high-density brush hair which catches and pulls the hair was provided so that a brush hair line might be surrounded, if it combs so that a brush section may be rotated and the hair may be caught by high-density brush hair, while applying the air current from an air outlet to the portion which extended the hair, it can have its hair cut.

[0024]
The hair care equipment based on the above-mentioned present invention is characterized by providing the straightening rib which has a surface of the direction which intersects an air current circulation direction in the air passage inside the above-mentioned brush section. The air current which circulates the inside of the above-mentioned air passage can be made to blow off with sufficient vigor from a plurality of air outlets provided to the above-mentioned brush section by such composition.
[0025]
Multiple above-mentioned straightening ribs are provided and, as for the hair care equipment based on the above-mentioned present invention, it is characterized by the ejection length of a rib becoming long as the downstream side in the above-mentioned air passage. The advancing air current can also make the inside of the above-mentioned air passage blow off uniformly by such composition ranging from a plurality of air outlets to the moving direction provided to the above-mentioned brush section.
[0026]
The hair care equipment based on the above-mentioned present invention is characterized by further having heating apparatus which heats the air current which circulates downstream from the above-mentioned air blower. By heating an air current and sending out from an air outlet by such composition, warm air can be made to be able to irradiate to the hair and it can have its hair cut efficiently.
[0027]
The hair care equipment based on the above-mentioned present invention sends out the air current which is further provided with the charged particle generator which generates charged particles, such as ion, downstream from the above-mentioned air blower, and circulates the inside of the above-mentioned air passage with the charged particle which occurred from an air outlet. By such composition, a charged particle can be made to be able to adhere to the hair efficiently, grace can be given with hairdressing, and the static electricity electrified on the hair can be removed.
[Effect of the Invention]
[0028]
According to the present invention, damage to hair can be inhibited and the hair care method which can improve a hair type can be provided.
[0029]
Since according to the present invention the high-density brush hair line which can catch and pull the hair was provided in hair care equipment so that a brush hair line

might be surrounded, while giving sufficient tensile force for the hair, it can have its hair cut. Since the air outlet of an air current is arranged at the both sides of a high-density brush hair line, the air and the charged particle which were heated while extending the hair by the above-mentioned high-density brush hair can be sprayed. Therefore, moisturization and electric discharge of the hair can be performed enough and hairdressing with good peculiarity picking etc. can be performed.

[Brief Description of the Drawings]

[0030]

A [FIG. 1] It is an appearance perspective view showing the hair care equipment of a 1st embodiment of the present invention.

A [FIG. 2] It is a side surface cross sectional view showing the hair care equipment of a 1st embodiment of the present invention.

A [FIG. 3] It is a top surface cross sectional view showing the hair care equipment of a 1st embodiment of the present invention.

A [FIG. 4] It is an outline outline view of the charged particle generator mounted on the hair care equipment of a 1st embodiment of the present invention.

A [FIG. 5] It is an axial sectional view showing the internal structure of the brush section of the hair care equipment of a 1st embodiment of the present invention.

A [FIG. 6] It is a cross sectional view in direction vertical to an axis showing the internal structure of the brush section of the hair care equipment of a 1st embodiment of the present invention.

A [FIG. 7] It is the figure showing an example of the hair care method using the hair care equipment of a 1st embodiment of the present invention.

A [FIG. 8] It is the figure showing the example of others of the hair care method using the hair care equipment of a 1st embodiment of the present invention.

A [FIG. 9] It is an appearance perspective view showing the hair care equipment of a 2nd embodiment of the present invention.

A [FIG. 10] It is a cross sectional view in direction vertical to an axis showing the internal structure of the brush section of the hair care equipment of a 2nd embodiment of the present invention.

A [FIG. 11] It is the figure showing an example of the hair care method using the hair care equipment of a 2nd embodiment of the present invention.

A [FIG. 12] It is the figure showing the conditions of the verification experiment 1 conducted in order to verify the effect of the present invention, and a result.

A [FIG. 13] It is the figure showing numerically the result of the verification experiment 1 shown in Fig.12.

A [FIG. 14] It is the figure showing the conditions of the verification experiment 2 conducted in order to verify the effect of the present invention, and a result.
A [FIG. 15] It is the figure showing the conditions of the verification experiment 3 conducted in order to verify the effect of the present invention, and a result.
A [FIG. 16] It is the figure showing the conditions of the verification experiment 4 conducted in order to verify the effect of the present invention, and a result.
A [FIG. 17] It is the figure showing the conditions of the verification experiment 5 conducted in order to verify the effect of the present invention, and a result.
[Description of Embodiments]
[0031]
Hereinafter, with reference to the figures, it describes in detail about an embodiment of the invention. In the embodiment shown below, the code same or same in the inside of the figure about a common portion is attached, and the description is not repeated.
[0032]
<A 1st embodiment>
Fig.1 is an appearance perspective view of the hair care equipment of this embodiment. Fig.2 and Fig.3 are the side surface cross sectional views and top surface cross sectional views of hair care equipment of this embodiment. It describes about the hair care equipment 1 applied to this embodiment with reference to Fig.3 from Fig.1.
[0033]
The hair care equipment 1 constituted the drier with a brush, and is provided with the pillar-shaped hold part 10 which a user ****s, and the brush section 30 removably connected with the axial direction of the hold part 10. The many brush hair 31 is set up by the range of a round half [ about ] except a part of circumferential direction in the brush section 30 seriate.
[0034]
The brush section 30 contains the many air outlet 33 provided around the brush hair 31. The air outlet 33 is provided with the following.
The air outlet 33a which comprises a stoma.
The air outlet 33b provided by brush section 30 side surface.
The air outlet 33a is provided by seriate between the sequences of the brush hair 31. The air outlet 33b is provided by the both side surfaces of the brush section 30 seriate so that the brush section 30 may set circumferentially and it may be crowded across the implantation region of the brush hair 31 in between.
[0035]
The power cord 17 is drawn from the end in the axial direction of the hold part 10. The

hold part 10 has the suction opening 15 which comprises the many stoma provided around the power cord 17. As shown in Fig.2, the operating part 12 with the operation switches 18 and 19 is provided by the end on the brush section 30 side of the hold part 10. Turning on and off of the air blower 3 mentioned below with the operation switch 18 and the charged particle generator 20 is switched. Turning on and off of the heater 4 as heating apparatus mentioned below with the operation switch 19 is switched.

[0036]

The operating part 12 is adjoined at the hold part 10, and the diameter reduction part 11 is provided. The diameter reduction part 11 is formed in a conic surface in an outer peripheral surface, and reduces the diameter of the outer diameter of the hold part 10 toward the operating part 12 from the suction opening 15 side. By ****ing the diameter reduction part 11 with a small outer diameter which adjoins the operating part 12, the user can perform easily moving operation of the hair care equipment 1, and switching operation of the operation switches 18 and 19.

[0037]

The connection part 16 which fits into the brush section 30 is provided by the other end in the axial direction of the hold part 10. The connection opening 16a carries out an opening to the end face of the connection part 16. The connection opening 16a is protected by the lattice formed mesh state and in the shape of a continuous hexagon for the foreign matter barrier to entry.

[0038]

The cavity part 25 is provided inside the hold part 10, and the cavity part 36 is provided inside the brush section 30. The air passage 24 which communicates the inside of the hold part 10 and the brush section 30 by the cavity part 25 and the cavity part 36 is formed. The cavity part 36 is inclined and formed in one side to the center of the connection opening 16a, and the air outlet 34 is provided by the gap portion with the connection opening 16a. A connection part is provided by the one end of the brush section 30, and it is connected so that checking and verifying may be carried out to the connection part 16. It sees from the air outlet 34 and the brush hair 31 is arranged toward the direction of a tip of the brush section 30.

[0039]

In the cavity part 25, it faces at the suction opening 15, and the air blower 3 is arranged. The air blower 3 is provided with the axial fan driven with the blower motor 3a. The air blower 3 may be formed with a centrifugal fan. A drive of the air blower 3 will lead an air current to the air outlet 33 and the air outlet 34 from the suction opening 15 by the air passage 24. The air outlet 33 is provided with the following.

The air outlet 33a which is arranged between brush hair lines.
33b which is arranged at the outside of a region of a brush hair line.

[0040]
It adjoins downstream from the air blower 3 in the cavity part 25, and the drive circuit 5 is arranged. The air blower 3, and the heater 4 and the charged particle generator 20 drive by the drive circuit 5. By arranging the drive circuit 5 in the air passage 24, the blower motor 3a and the drive circuit 5 can be cooled according to the air current which circulates the air passage 24.
[0041]
The converging section 26 to which an inner wall surface is inclined downstream from the air blower 3 in the cavity part 25, and a flow path is extracted is provided. The outer peripheral surface of the diameter reduction part 11 is formed along with the converging section 26, and can reduce easily the diameter of the outer diameter of the diameter reduction part 11. In the converging section 26, the heater 4 of coil shape is arranged, and it carries out the temperature rise of the air current. The ion mixing part 27 is provided downstream from the converging section 26.
[0042]
The ion mixing part 27 carries out the input 26a of the downstream end of the converging section 26, abbreviation, etc., is, and has a flow area. Since a flow path is extracted, the flow rate increases, and the air current which circulates the converging section 26 is guided toward the central part of the flow path. For this reason, the air current by which the temperature rise was carried out with the heater 4 in the central part of the ion mixing part 27 circulates. The flow area of the ion mixing part 27 may be made wider than the input 26a.
[0043]
The clamp face 27a of the plane exposed to the outer surface of the operating part 12 is formed in the peripheral surface of the ion mixing part 27, and the charged particle generator 20 of a plane view rectangle is removably arranged on the clamp face 27a. The contact which is not illustrated is exposed to the wall surface which adjoined the diameter reduction part 11 of the operating part 12, and it is connected to the drive circuit 5. The terminal 51 by which an electric power supply is carried out via contact is provided by the end face of the charged particle generator 20. The outer peripheral surface of the charged particle generator 20 is covered with the covering 23 detached and attached to the operating part 12.
[0044]

Fig.4 is an outline outline view of the charged particle generator mounted on the hair care equipment of this embodiment. With reference to Fig.4, it describes about the charged particle generator 20. In this embodiment, the ion generation device which generates the ion of positive/negative is illustrated and described as a charged particle generator.

[0045]

The charged particle generator 20 has the pair of needlelike discharge electrode 21. The charged particle generator 20 faces at the air passage 24 via the opening 27b which carries out an opening on the clamp face 27a. The discharge electrode 21 is arranged at one end of the air current circulation direction of the air passage 24 which is a front part of the charged particle generator 20. Thereby, one end of the charged particle generator 20 faces and is arranged at the opening 27b. The inner package of the circuit board 50 is carried out to the end of another side away from the discharge electrode 21 of the charged particle generator 20 which exists at rear end, and the terminal 51 is provided by the rear end face.

[0046]

The cover part 22 which covers the upper part of the discharge electrode 21 is provided by the charged particle generator 20. The through-hole 22a which the discharge electrode 21 faces is carrying out the opening to the cover part 22. When detaching and attaching the charged particle generator 20 by the cover part 22, contact with a user's fingers and the discharge electrode 21 is prevented, and the discharge electrode 21 is protected.

[0047]

The charged particle generator 20 generates the high voltage electrical and electric equipment in the circuit board 50 to incorporate. A positive high voltage pulse is applied to one discharge electrode 21, and a negative high voltage pulse is applied to the discharge electrode 21 of another side. Thereby, corona discharge occurs at the tip of the discharge electrode 21. The water molecule in the air ionizes by the corona discharge of the discharge electrode 21 which applied positive voltage, and a hydrogen ion is generated.

This hydrogen ion clusters with the water molecule in the air with solvation energy. The atmospheric ion (positive ion) which comprises $H^+(H_2O)_m$ (m is any natural number) as a charged particle of straight polarity is generated by this, and an air current is mixed.

[0048]

The oxygen molecule or water molecule in the air ionizes by the corona discharge of the discharge electrode 21 which applied negative voltage, and oxygen ion is generated.

This oxygen ion clusters with the water molecule in the air with solvation energy. The atmospheric ion (negative ion) which comprises $O_2^-(H_2O)_n$ (n is any natural number) is generated as a charged particle of negative polarity by this, and an air current is mixed.

[0049]

At this time, as for the ion mixing part 27, the specified quantity leaves the pair of discharge electrode 21 circumferentially, and it is arranged at the periphery of the ion mixing part 27, respectively. The air current which the flow rate increased with the converging section 26 of the upper stream of the ion mixing part 27 circulates the central part of the ion mixing part 27. For this reason, the ion of both positive/negative generated with the discharge electrode 21 of the periphery is sucked by negative pressure, and is mixed by the air current which circulates the central part of the ion mixing part 27.

[0050]

If an air current circulates, the ion which collides and disappears to the wall of the air passage 24 according to an air current will increase the periphery of the ion mixing part 27. For this reason, disappearance of ion can be reduced by sucking the ion of positive/negative which circulated the central part of the ion mixing part 27 in the air current which passed the converging section 26, and was generated with the discharge electrode 21, and mixing. When the discharge electrode 21 is arranged in the central part of the ion mixing part 27, the pressure loss of the air passage 24 enlarges. For this reason, blowing efficiency can be improved by arranging the discharge electrode 21 to the periphery of the ion mixing part 27.

[0051]

As shown in Fig.2, the cavity part 36 is arranged at the same side as the discharge electrode 21 to the axial center of the converging section 26, and the brush hair 31 is arranged at the opposite side of the discharge electrode 21 to the axial center of the converging section 26. Thereby, the ion generated with the discharge electrode 21 is smoothly led to the cavity part 36. Therefore, many ion of positive/negative can be sent out from the air outlet 33a between the brush hair 31, and the air outlet 33b of brush section 30 side surface.

[0052]

In this case, it is preferable that the concentration of either the positive ion in the air passage 24 from the charged particle generator 20 to the air outlets 34, 33a, and 33b and negative ion is smaller than 50 million-piece [/cm ]$^3$ more largely than 5000-piece [/cm ]$^3$.

[0053]

When the concentration of either positive ion and negative ion is below 5000-piece [/cm ] $^{3}$, the static electricity which occurs by friction with the high-density brush hair 31b and the hair (hair group) 38 (refer to Fig.7 and Fig.8) in the case of hairdressing mentioned below may be unable to be removed sufficiently. As a result, the improvement effect of gloss, the damage depressor effect of a cuticle, split hair and the effect which breaks and inhibits the development of hair, etc. may be unable to be exerted sufficiently.

[0054]

When the concentration of either positive ion and negative ion is more than 50 million-piece [/cm ] $^{3}$, and positive ion and negative ion collide, the atmospheric ion of both positive/negative will disappear. As a result, both sufficient quantity of positive ion and negative ion cannot be supplied to the hair 38, and the improvement effect of gloss, the damage depressor effect of a cuticle, split hair and the effect which breaks and inhibits the development of hair, etc. may be unable to be exerted sufficiently.

[0055]

The covering 23 is formed with a resin molded article, is slid to the axial direction of the operating part 12, and is opened and closed. The locking claw 23a is provided by the side part on the brush section 30 side of the covering 23, and the locking claw 23b is provided by the side part on the diameter reduction part 11 side. The press rib 23d is provided by the end face on the brush section 30 side of the covering 23.

[0056]

The covering 23 can be slid to the discharge electrode 21 side, and can be removed from the terminal side, the charged particle generator 20 can be detached and attached, and cleaning of the discharge electrode 21 and exchange of the charged particle generator 20 can be performed.

[0057]

The shielding rib 23c of the lattice shape close to the outer peripheral surface of the charged particle generator 20 is provided by the inner surface of the covering 23. The shielding rib 23c shields between the front part of the charged particle generator 20, and rear parts by the inside of the covering 23. The terminal 51 arranged on the rear end face may contact contact, and a high temperature air current may leak the charged particle generator 20 from the gap between the opening 27b and the front end surface of the charged particle generator 20. At this time, the air current is shielded by the shielding rib 23c, and can prevent the temperature rise of the circuit board 50 placed at the rear part of the charged particle generator 20.

[0058]

Fig.5 is an axial sectional view showing the internal structure of the brush section of the hair care equipment of this embodiment, and is the cross sectional view which was along the axis line of the brush section 30. Fig.6 is a cross sectional view in direction vertical to an axis showing the internal structure of the brush section of the hair care equipment of this embodiment, and is the cross sectional view which the A-A line in Fig.2 cut and was seen to the arrow direction. With reference to Fig.5 and Fig.6, it describes about the structure of the brush section 30.

[0059]

As shown in Fig.5 and Fig.6, a plurality of brush hair 31 constitutes a plurality of single track brush hair lines 32 mentioned below and two high-density brush hair lines (the non-figure) mentioned below.

[0060]

The single track brush hair line 32 is formed by installing points successively along the axial direction of the brush section 30 in the brush hair (single track brush hair) 31a of the single hair formed round. Plural-lines side-by-side installation of the single track brush hair line 32 is carried out at the predetermined intervals at the range of a round half [ about ] except a part of circumferential direction of the brush section 30 (peripheral surface).

[0061]

The single track brush hair 31a of the single track (single hair) which constitutes the single track brush hair line 32 is the single hair formed in the thickness of around 1 mm, and about ten mm in length with resin, such as polyacetal, and is implanted on the base material 35 formed by rubber etc.

[0062]

A high-density brush hair line is formed by installing successively the high-density brush hair 31b which made thin hair the two or more bundle along the axial direction of the brush section 30. The brush section 30 separates two high-density brush hair lines each other circumferentially, and they are arranged. Two high-density brush hair lines are arranged so that the single track brush hair line 32 of plurality circumferentially which intersects the axial direction of the brush section 30 may be put.

[0063]

That in which the high-density brush hair 31b tied up into a knot several - about ten animal hairs, such as a pig and a wild boar, specifically is a unit. What has them is used. [ thinner animal hairs than the single track brush hair 31a and short ] As animal hairs, what is hard to generate static electricity is preferable. By tying up several animal hairs into a knot, the hair 38 can be caught in the gap and appropriate friction can be

generated. For this reason, bigger tensile force than a **** case can be made for the hair to act on the hair 38 by the single track brush hair 31a by the high-density brush hair 31b at a **** case.

[0064]

For example, weight is 15g, and when length moves the hair care equipment 1 to the hair-ends side from the root side of a hair group at 100 mm/sec in speed to the hair group which is 500 mm, it is more preferable than 0.5N that tensile force acts on a hair group in the range largely smaller than 10.0N.

[0065]

Tensile force may be unable to improve sufficiently the wavy hair and the wave which the hair 38 has by less than 0.5N. There is a possibility that hair may fall out or tensile force may fracture by more than 10.0N on the other hand,.

[0066]

The tensile force of the small range can make the hair 38 act on the hair 38 concerned by ****** by the single track brush hair 31a. For example, in the single track brush hair 31a, it is more preferable than 0.5N to be able to make tensile force act in the range largely smaller than 3.0N, and to make the tensile force which is about 1.5N act.

[0067]

The tensile force of the large range can make the hair 38 act on the hair 38 concerned by ****** by the high-density brush hair 31b. For example, it is preferable to be able to make tensile force act in the range smaller than more than 3.0N10.0N, and to make the tensile force which is about 5.0N act in the high-density brush hair 31b.

[0068]

Resin hair etc. can be used for the thin hair which constitutes the high-density brush hair 31b besides animal hairs. In this case, the resin hair which can form an appropriate gap in appropriate flexibility and hair, can catch the hair 38, and can generate appropriate friction is preferable.

[0069]

The air outlet 33 is provided with the following.

The air outlet 33a which is provided by the base material 35 and is arranged at each between the adjoining single track brush hair lines 32.

The air outlet 33b which a brush row of the high-density brush hair 31b provided by both-ends outermost row of a circumferential direction is the outside further, and is provided by both side surfaces of the brush section 30.

[0070]

The cavity part 36 is formed in the inside of the brush section 30 in the single track brush hair line 32 direction, and the air which contains a charged particle with the air blower 3 is supplied to the axial direction of the cavity part 36. In order to make a direction change of this air current towards the air outlet 33a which carries out an opening to the brush section 30, and the air outlet 33b, the straightening rib 37 is provided so that the moving direction of an air current may be intersected. The straightening rib 37 is located in a line with the 1st rib 37a, the 2nd rib 37b, and the 3rd rib 37c sequentially from the windward of an air current, and downward ejection length is long at the order of the 1st rib, the 2nd rib, and the 3rd rib.

[0071]

The air supplied by the air blower 3 turns the cavity part 36 in the direction of a tip, and proceeds, and in order to spout from the air outlet 33a and the air outlet 33b to the radial direction of the brush section 30, volume decreases gradually as it approaches at a tip. Even if the collision surface of an air current is enlarged gradually and the volume of an air current decreases by considering the straightening rib 37 as such form and arrangement, it can be made to blow off from the air outlet 33a and the air outlet 33b efficiently.

[0072]

In the hair care equipment 1 of the above-mentioned composition, the description of operation in the case of having one's hair cut is performed. When a user ****s the hold part 10 and operates the operation switches 18 and 19, the air blower 3, the heater 4, and the charged particle generator 20 drive. Thereby, the open air flows in the air passage 24 via the suction opening 15. The temperature rise of the air which circulates the air passage 24 is carried out by the heater 4 with the converging section 26, and it flows into the ion mixing part 27 via the input 26a.

[0073]

The air current which flowed into the ion mixing part 27 circulates the central part of the ion mixing part 27 at high speed, sucks the ion generated from the discharge electrode 21 of the charged particle generator 20 with negative pressure, and is mixed. The air current containing ion passes the connection opening 16a, and a part is sent out to an axial direction between the brush hair 31 from the air outlet 34.

[0074]

The air current containing ion circulates the cavity part 36, and is simultaneously sent out to a radial direction by the air outlet 33a from between the single track brush hair 31a in the side face direction of the air outlet 33b to the brush section 30. When a user ****s the hold part 10 and makes it move along with the hair 38, the single track brush

hair 31a slides on the hair 38, and is brushed. At this time, while drying the hair 38 according to the high temperature air current sent out from the air outlet 33 and the air outlet 34, hairdressing is performed by the single track brush hair 31a.

[0075]

Since the air current which contains ion between the single track brush hair 31a in parallel from the air outlet 33 and the air outlet 34 is sent out, the ion which reaches and adheres to the hair 38 can be made to increase. While giving grace with ion to the hair 38, the static electricity of the hair 38 which occurred by the slide with the single track brush hair 31a is discharged. By this, the hair 38 can be moisturized, the breadth of the hair by static electricity can be inhibited, and good hairdressing can be performed.

[0076]

With reference to Fig.7 and Fig.8, it describes about the hair care method using the hair care equipment 1 concerning this embodiment. Although the graphic display is not carried out, Fig.7 and Fig.8 have people's head in the left-hand side of the hair 38, an upper end is a head side and the hair 38 assumes that it is connected with people's head.

[0077]

It is characterized by a hair care method using the hair care equipment 1 concerning this embodiment comprising the following.

How to carry out ****** hairdressing of the hair group using the single track brush hair 31a.

How to carry out ****** hairdressing of the hair group using the high-density brush hair 31b.

The hairdressing method using the single track brush hair 31a and the hairdressing method using the high-density brush hair 31b can be switched.

[0078]

Fig.7 is the figure showing an example of the hair care method which used the hair care equipment of this embodiment. If it is in the method of carrying out ****** hairdressing of the hair group by the single track brush hair 31a as shown in Fig.7, the single track brush hair 31a is inserted in the hair 38, and the hair care equipment 1 is moved to the hair-ends side from the root side of the hair 38. Thereby, the single track brush hair 31a contacts the hair 38, and slides. At this time, the ion of both warm air and positive/negative blows off from the air outlet 33a of the brush section 30, and the hair 38 and the single track brush hair 31a are sprayed.

[0079]

Thereby, it generates by friction with the single track brush hair 31a and the hair 38, and can remove the static electricity of straight polarity electrified on the hair 38, and the

static electricity of negative polarity electrified in the single track brush hair 31a. As a result, the static electricity which occurs in the case of brushing can be inhibited substantially, and damage to the hair by static electricity can be inhibited.

[0080]

Hair types, such as wavy hair and a wave, are improvable, giving grace to the hair 38 by spraying the warm air which contains the ion of both positive/negative in the state where caught the hair 38 by the single track brush hair 31a, and it made tensile force act on the hair 38. The gloss of hair can also be made to improve.

[0081]

Fig.8 is the figure showing the example of others of the hair care method which used the hair care equipment of this embodiment. If it is in the method of carrying out ****** hairdressing of the hair group by the high-density brush hair 31b as shown in Fig.8, the brush hair 31 is inserted in the hair 38 so that the high-density brush hair 31b may be inserted in the hair 38. In this state, the hair care equipment 1 is moved to the hair-ends side from the root side of the hair 38.

[0082]

When switching the hair care method from the hairdressing method using the single track brush hair 31a to the hairdressing method using the high-density brush hair 31b, a user rotates the brush section 30 in the direction which twists the hand which has the hold part 10 in a suitable position about 90 degree and in which the high-density brush hair 31b catches the hair 38. Thereby, the high-density brush hair 31b is inserted in the hair 38. Only the hairdressing method using the high-density brush hair 31b may be enforced.

[0083]

Here, since the high-density brush hair 31b is constituted by tying up several animal hairs into a knot, when the hair 38 enters into the gap between animal hairs, it can catch the hair 38. For this reason, the high-density brush hair 31b is constituted so that friction with hair may enlarge as compared with the single track brush hair 31a. Thereby, bigger tensile force than a **** case can be made for the hair 38 to act on the hair 38 by ****** by the high-density brush hair 31b at the single track brush hair 31a.

[0084]

The warm air which contains the ion of both positive/negative from the air outlet 33b which is placed at the side surface of the brush section 30 on the outside of the high-density brush hair 31b is sprayed on the region 38a which sees from the high-density brush hair 31b, and is placed at the back side of the moving direction (direction which combs hair) of the high-density brush hair 31b. The warm air which

contains the ion of both positive/negative from the air outlet 33a which is placed inside the high-density brush hair 31b is sprayed also on the high-density brush hair 31b.

[0085]

Thereby, it generates by friction with the high-density brush hair 31b and the hair 38, and can remove the static electricity of straight polarity electrified on the hair 38, and the static electricity of negative polarity electrified in the high-density brush hair 31b. As a result, the static electricity which occurs in the case of brushing can be inhibited substantially, and damage to the hair by static electricity can be inhibited.

[0086]

Hair types, such as wavy hair and a wave, are effectively improvable, giving grace to the hair 38 by spraying the warm air which contains the ion of both positive/negative in the state where bigger tensile force than the case where only the single track brush hair 31a is used was made to act on the hair 38. The gloss of hair can also be made for these results to improve effectively.

[0087]

The air blower 3 and the charged particle generator 20 can also be driven in the state of OFF of the heater 4 by the change of the operation switch 19. In this case, by sending out the cold blast containing the ion of positive/negative from the air outlet 34, while taking the heat of a head at a hot time etc., with ion, grace can be given to the hair 38 and the static electricity at the time of hairdressing can be removed.

[0088]

Thus, the air current sent out from the air outlet 33 may be warm air, or may be cold blast. In this case, when environmental temperature is 30 degrees C, for example, as for the temperature of the air current sent out from the air outlet 33, in the nearly tip of the brush hair 31, it is preferable that it is above 30 degrees C and below 200 degrees C, and it is still more preferable that it is above 50 degrees C and below 120 degrees C.

[0089]

When the temperature of an air current is lower than 30 degrees C in the nearly tip of the brush hair 31, the improvement effect of the wavy hair based on heat and a wave becomes low. When the temperature of an air current is higher than 120 degrees C in the nearly tip of the brush hair 31 on the other hand, even if it is a short-time blow, there is a possibility of hurting one's hair. When the temperature of an air current becomes above 50 degrees C and below 120 degrees C in the nearly tip of the brush hair 31, wavy hair and a wave are more improvable by the effect of heat with a sufficient degree.

[0090]

As described above, according to this embodiment, the air outlet 33 of the air passage

24 which communicates the hold part 10 and the brush section 30 carries out an opening between the brush hair 31, and the discharge electrode 21 faces and is arranged at the air passage 24. For this reason, the ion which sends out the air current which contains the ion of both positive/negative from the air outlet 33 between the brush hair 31, and reaches the hair can be made to increase.

[0091]

Since the discharge electrode 21 is arranged at the periphery of the downstream air passage 24 rather than the converging section 26, the ion which inhibits disappearance of ion and reaches the hair can be made to increase. Therefore, moisturization and electric discharge of the hair 38 can be performed enough, and good hairdressing can be performed.

[0092]

The charged particle generator 20 is removably provided to the hold part 10, and the discharge electrode 21 faces and is arranged at the air passage 24 via the opening 27b which carries out an opening to the peripheral surface of the air passage 24. While removing the charged particle generator 20 and being able to clean the discharge electrode 21 easily by this, the charged particle generator 20 with which the circuit board 50 and the discharge electrode 21 were unified is easily exchangeable. Since the discharge electrode 21 is arranged to the periphery of the air passage 24, the charged particle generator 20 can consist of easy structures removably rather than arranging in the central part.

[0093]

It has the shielding rib 23c which the covering 23 approaches the peripheral surface of the charged particle generator 20, and shields between the front part of the charged particle generator 20, and rear parts. The temperature rise of the circuit board 50 by the high temperature air current leaked from the gap between the opening 27b and the charged particle generator 20 can be prevented by this, and the reliability of the hair care equipment 1 can be improved.

[0094]

The cavity part 36 is formed in the same side as the discharge electrode 21 to the axial center of the converging section 26, and the brush hair 31 is arranged at the opposite side of the discharge electrode 21 to the axial center of the converging section 26. The ion generated with the discharge electrode 21 is smoothly led to the cavity part 36 by this, and high-concentration ion can be sent out from the air outlet 33.

[0095]

The single track brush hair 31a is provided by the prescribed range except a part of

circumferential direction of the brush section 30, and the air outlet 33a is provided between the single track brush hair lines 32. The brush row of the high-density brush hair 31b is placed at the both ends of the circumferential direction of the brush section 30, and the air outlet 33b is provided by the side surface of the brush section 30 on the outside. The static electricity which occurs by this when the single track brush hair 31a and the high-density brush hair 31b separate from the hair 38 can be discharged efficiently.

[0096]

Since a row number also enlarges many totals of air outlet area, the air outlet 33a can change both balance by making each effective area product of the air outlet 33a smaller than the effective area product of the air outlet 33b. By making the quantity of the blow-off air current from the air outlet 33b increase, the effect which contributes to peculiarity picking of the hair 38 is made largely.

[0097]

It is also possible to change both balance by changing the number of air outlets instead of changing the effective area product of the air outlet 33a or the air outlet 33b.

[0098]

A user can be made easy to reduce easily the diameter of the outer diameter of the diameter reduction part 11, and to have, since the outer peripheral surface of the diameter reduction part 11 of the hold part 10 was formed along with the converging section 26. That is, the diameter reduction part 11 is formed in a conic surface in an outer peripheral surface, and reduces the diameter of the outer diameter of the hold part 10 toward the operating part 12 to the suction opening 15 side. For this reason, a user can **** the diameter reduction part 11 with a small outer diameter which adjoins the operating part 12.

[0099]

Furthermore, the charged particle generator 20 is arranged on the downstream side of the diameter reduction part 11, and the operation switches 18 and 19 are provided by the operating part 12 provided in the part which volume enlarged by storing of the charged particle generator 20. Thereby, moving operation of the hair care equipment 1 and switching operation of the operation switches 18 and 19 under hairdressing operation can be performed easily.

[0100]

The hair group on which tensile force acts the air current which contains the ion of both positive/negative using the hair care method concerning this embodiment while making tensile force act on a hair group, And by spraying the single track brush hair 31a or the

high-density brush hair 31b, and having one's hair cut, damage to hair can be inhibited and a hair type can be improved.

[0101]

<A 2nd embodiment>

Next, Fig.9 is a perspective view of the hair care equipment of a 2nd embodiment of the present invention. Fig.10 is a cross sectional view in direction vertical to an axis showing the internal structure of the brush section of the hair care equipment of this embodiment, and is a cross sectional view of the brush section 30 which looked at the B-B section in Fig.9 from the direction of an arrow. The same code is given to the same portion as a 1st embodiment shown in the above-mentioned Fig.1 - Fig.8 of a description for convenience. As for this embodiment, the brush hair 31 is provided by the whole circumference of the circumferential direction of the brush section 30. Other portions are the same as that of a 1st embodiment.

[0102]

According to this embodiment, the single track brush hair line 32 in which the brush section 30 installed a plurality of brush hair 31 in the axial direction side by side is installed in 24 rows side by side at an equal interval over the whole circumference of a circumferential direction. The brush hair 31 is provided with the following like a 1st embodiment.

Single track brush hair 31a which consists of single track of a synthetic resin.

High-density brush hair 31b which made short animal hairs a bundle.

[0103]

The high-density brush hair 31b makes a sequence in the position which divides the circumference of the brush section 30 into three equally, and is arranged in it. That is, the high-density brush hair line is provided by the position which divides the circumference of the brush section 30 into three equally. Between the high-density brush hair lines which open an interval circumferentially each other and are arranged, multiple single track brush hair lines 32 which made the single track brush hair 31a install successively install side by side, and it provides.

[0104]

Between the adjoining single track brush hair lines 32 and between an adjoining high-density brush hair line and the single track brush hair line 32, the air outlet 33 which comprises a many stoma is provided. According to this embodiment, the air outlet provided between the single track brush hair lines 32 is called the air outlet 33a, and the air outlet provided by the both sides of the high-density brush hair line of the

brush section 30 which can be set circumferentially is called the air outlet 33b.

[0105]

According to this embodiment, unlike a 1st embodiment, the cavity part 36 provided inside the brush section 30 is formed in a small diameter rather than the connection opening 16a as concentrically as the connection opening 16a. A gap arises in a radial direction according to the diameter of the cavity part 36 being small, and this gap constitutes the air outlet 34 from the connection opening 16a. Thereby, the air current containing ion is sent out between brush rows from the air outlet 34 toward the brush hair 31.

[0106]

The air current containing the ion of both positive/negative which entered into the cavity part 36 blows off from the air outlet 33 provided on the circumference of the brush section 30 to a radial direction. While the ion of positive/negative adheres to the hair 38 and giving grace with hairdressing of the hair 38 by this, the static electricity which occurs by friction with the brush hair 31 and the hair 38 is removable. Many ion can be made to reach the hair 38 by sending out the air current which contains the ion of positive/negative from the air outlets 33 and 34.

[0107]

Although the straightening rib 37 is provided like a 1st embodiment inside the cavity part 36, in the bottom, in a 1st embodiment, the straightening rib which was half [ about ] yen-shaped is concentrically formed in structurally indispensable division. It is the same as a 1st embodiment that see from the connection opening 16a, it is arranged from this side in order of the 1st rib 37a, the 2nd rib 37b, and the 3rd rib 37c, and the ejection length of a rib is formed for a long time in order of the 1st rib 37a, the 2nd rib 37b, and the 3rd rib 37c.

[0108]

Although a 1st embodiment differs in the number of the single track brush hair line 32 and high-density brush hair lines, and the area of arrangement parts from a 2nd embodiment, it is arranged with the same thought and the same effect as a 1st embodiment can be acquired. The hair 38 is caught using at least either of the high-density brush hair 31b or the single track brush hair 31a placed at three places on the circumference of the brush section 30. Applying tensile force, by spraying the warm air which contains the ion of both positive/negative from the air outlet 33b on the hair group and high-density brush hair line on which tensile force acts, damage to hair can be inhibited and a hair type can be improved.

[0109]

Since ion blows off from the air outlet 33 provided between the single track brush hair lines 32 and between the highly dense brush hair line and the single track brush hair line 32, The static electricity which occurs when the brush hair 31 separates from the hair, even if it brushes in which position of the circumferential direction of the brush section 30 can be discharged efficiently.

[0110]

Fig.11 is the figure showing an example of the hair care method which used the hair care equipment of this embodiment. With reference to Fig.11, it describes about the hair care method concerning this embodiment. Fig.11 shows an example of the hairdressing method which used the high-density brush hair 31b.

[0111]

If it is in the hair care method concerning this embodiment, a user inserts at least either in the hair 38 among the high-density brush hair 31b arranged to three on the peripheral surface of the brush section 30, and is moving the brush section 30 for the brush section 30 to the hair-ends side from the root side of the hair 38 in this state.

[0112]

It is ********** about the hair 38 in both the high-density brush hair 31b and the single track brush hair 31a, catching the hair 38 specifically by the high-density brush hair 31b in the bottom part of the brush section 30 in the figure, and applying tensile force to the hair 38 concerned.

[0113]

The warm air which contains the ion of both positive/negative from the air outlet 33b in the both sides of the high-density brush hair 31b supplementary to the hair 38 is sprayed on the region 38a which is adjacent spaces of the high-density brush hair 31b. Thereby, it generates by friction with the high-density brush hair 31b and a hair group, and can remove the static electricity of straight polarity electrified in the hair group, and the static electricity of negative polarity electrified in the high-density brush hair 31b. As a result, the static electricity which occurs in the case of brushing can be inhibited substantially, and damage to the hair by static electricity can be inhibited.

[0114]

Hair types, such as wavy hair and a wave, are effectively improvable, giving grace to the hair 38 by spraying the warm air which contains the ion of both positive/negative in the state where tensile force was made to act on the hair 38. The gloss of hair can also be made for these results to improve effectively.

[0115]

Simultaneously, as shown on the left in the figure, it sees from the high-density brush

hair 31b supplementary to a hair group, and is placed behind the moving direction (direction which combs hair) of the brush section 30, The warm air which contains the ion of both positive/negative from the air outlet 33b in the both sides of other high-density brush hair 31b is sprayed also on the region 38b which is placed near other high-density brush hair 31b.

[0116]

Tensile force is acting also on the hair group which is placed near other high-density brush hair 31b (it is placed at the region 38b) by the high-density brush hair 31b in the bottom part of the brush section 30 in the figure. For this reason, also in the hair group which is placed near other high-density brush hair 31b, hair types, such as wavy hair and a wave, are improvable, giving grace to the hair 38.

[0117]

Since other high-density brush hair 31b on the left in the figure can catch the hair 38 if a user rotates the hold part 10 which it had counter clockwise in the figure for a while, tensile force can be applied still more strongly. Also in this case, the static electricity which occurs in the case of brushing can be substantially inhibited for the same Reason as ****, and damage to the hair by static electricity can be inhibited. Hair types, such as wavy hair and a wave, are effectively improvable, giving grace to the hair 38.

[0118]

Thus, at two or more places, since a hair type is also improvable, inhibiting damage to hair, hairdressing time can also be shortened. Hairdressing time can be shortened while being able to improve hair types, such as wavy hair and a wave, more effectively also in this point, since the high-density brush hair 31b is also used and it becomes ****** about the hair 38, using the single track brush hair 31a.

[0119]

<A 3rd embodiment>

In a 2nd embodiment, although the high-density brush hair 31b has been arranged seriate in the position which divides the whole circumference of the brush section 30 into three equally, it may arrange in the position which divides the whole circumference into two equally, and may arrange in the position divided equally 4 division-into-equal-parts -6.

[0120]

In this case, as compared with a 1st embodiment, wavy hair, a wave, etc. are more improvable by supplementing with hair with more high-density brush hair lines. Hairdressing time can also be shortened.

[0121]

However, if the row number of a high-density brush hair line increases, the burden of a user's arm not only increasing, but friction enlarging at the time of hairdressing and hurting one's hair will be considered. It is preferable to arrange [ row number / a number, ] appropriately with the material and implantation density of hair of the high-density brush hair 31b.

[0122]

In order that the main user of hair care equipment like the present invention may think that she is a woman, it is important that physical strength and the power of a wrist are weak and the burden on an arm is heavy and that the burden on the head by the long hair should also be taken into consideration, and it is easy to treat a burden few.

[0123]

<A 4th embodiment>

They may be plural lines although the high-density brush hair 31b has been arranged in each position by a 3rd embodiment from a 1st embodiment at one row. Also in this case, since the burden on a user's physical strength and physical strength not only increasing, but friction enlarging at the time of hairdressing and hurting one's hair will be considered if it installs not much excessively, suitable arrangement should be called for with the material and implantation density of hair of the high-density brush hair 31b. As compared with a 1st embodiment, wavy hair, a wave, etc. are more improvable in this case. Hairdressing time can also be shortened.

[0124]

<A 5th embodiment>

In an above embodiment, the hair care equipment 1 may be a drier which excludes the heater 4 and sends out cold blast. In the case where warm air is not used, peculiarity picking is gently performed by the grace grant by ion. Also in this case, the static electricity which occurs by friction of the high-density brush hair 31b and a hair group is removable with the ion of both positive/negative. For this reason, also in a 5th embodiment, an effect substantially equivalent to a 1st embodiment is acquired.

[0125]

<A 6th embodiment>

Although the charged particle generator 20 used by the present invention has generated atmospheric ion, it does not restrict to this. For example, electrostatic atomization equipment may constitute the charged particle generator 20. In electrostatic atomization equipment, dew condensation water occurs the discharge electrode 21 on the surface of the discharge electrode 21 by cooling by a Peltier device. If negative high tension is applied to the discharge electrode 21, the charged-corpuscle water which contains an

anion from dew condensation water will be generated. If positive high tension is applied to the discharge electrode 21, the charged-corpuscle water which contains a positive ion from dew condensation water will be generated. The charged particle of the positive/negative which comprises charged-corpuscle water can be sent out by this, and moisturization and electric discharge of the hair can be performed.

[0126]

For this reason, even if it is in the hair care method concerning this embodiment, the substantially same effect as the hair care method concerning embodiment 1 can be acquired.

[0127]

Disappearance of the charged-corpuscle water by an air current carrying out direct contact to charged-corpuscle water, and charged-corpuscle water evaporating can be prevented by arranging the discharge electrode 21 on the periphery of the air passage 24, and providing the converging section 26 to the upstream.

[Working example]

[0128]

(Verification experiment 1)

Fig.12 is the figure showing the conditions of the verification experiment 1 conducted in order to verify the effect of the present invention, and a result. Fig.13 is the figure showing numerically the result of the verification experiment 1 shown in Fig.12. With reference to Fig.12 and Fig.13, it describes about the verification experiment 1 conducted in order to verify the effect of the present invention.

[0129]

As shown in Fig.12 and Fig.13, in the verification experiment 1, the gloss of the hair at the time of having one's hair cut using the hair care method in Examples 1 and 2 and the comparative examples 1-3 was evaluated. As the hair care method in Example 1, the warm air which contains the ion of both positive/negative for a hair group with **** was sprayed on the hair group by the high-density brush hair 31b. As the hair care method in Example 2, the warm air which contains the ion of both positive/negative for a hair group with **** was sprayed on the hair group by the single track brush hair 31a.

[0130]

As the hair care method in the comparative example 1, it is hair group ********** about the warm air which does not contain the ion of both positive/negative for hair with **** by the high-density brush hair 31b. As the hair care method in the comparative example 2, the warm air which does not contain the ion of both

positive/negative for a hair group with **** was sprayed on the hair group by the single track brush hair 31a. As the hair care method in the comparative example 3, the warm air which contains only an anion for a hair group with **** was sprayed on the hair group by the single track brush hair 31a.

[0131]

When having evaluated the gloss of hair, the state before and behind the blow by hair care equipment was photoed using the camera [ the regio occipitalis capitis ] in the dark room from the parietal region. EOS Kiss X5 (made by a canon company) was used for the camera. The blow partitioned the parietal region and the regio occipitalis capitis to 6 blocks, and performed them 3 times per each block.

[0132]

As shown in Fig.12, in the image shown in Example 1, the annular bright portion (a so-called angel's ring) which reflects light and with which it is shining has gathered straightly as compared with the comparative examples 1-3. Thereby, when the hair care method in Example 1 is enforced, it can check that the most beautiful gloss is obtained.

[0133]

The gloss value was computed from the image photoed using image processing software (product name: "Photoshop (registered trademark)", Adobe System Inc).

[0134]

The gloss value was computed with the average luminance of a portion (annular bright portion which looks like an angel's ring in Fig.12) with the highest luminance / average luminance of the dark portion. Here, a dark portion is a portion which was placed at the circumference of the annular bright portion which looks like an angel's ring in Fig.12 and as for which a predetermined distance fell in the longitudinal direction from the bright portion concerned.

[0135]

The gloss value (initial value) in the initial state before a blow was compared with the gloss value in the state after a blow, and the relative value at the time of setting an initial value to 100 in each of Examples 1 and 2 and the comparative examples 1-3 was computed. In Fig.13, the relation between Examples 1 and 2, the comparative examples 1-3, and a relative value is illustrated.

[0136]

As shown in Fig.13, in Example 1, the relative value after the blow at the time of setting an initial value to 100 is 143, and the gloss value is increasing 43%. On the other hand, in the comparative example 1 and Example 2, the relative value after a blow is 122,113, and it can check that the gloss value of what is less than Example 1 is improving. In the

comparative examples 2 and 3, as for the relative value after a blow, both are 105 and change was hardly looked at by the gloss value.

[0137]

It can check that gloss improves by comparing the result of Example 1 and Example 2 with the result of the comparative examples 2 and 3, and spraying the ion of both positive/negative on a hair group. It can check that gloss improves a hair group more by ******, comparing the result of the result of Example 1, and Example 2, and the result of the comparative example 1 and the result of the comparative example 2, and making tensile force act on a hair group using the high-density brush hair 31b.

[0138]

It can check that a gloss value can be improved substantially by spraying the ion of both positive/negative, comparing the result of Example 1 with the result of the comparative example 2, and making tensile force act on a hair group using the high-density brush hair 31b.

[0139]

(Verification experiment 2)

Fig.14 is the figure showing the conditions of the verification experiment 2 conducted in order to verify the effect of the present invention, and a result. With reference to Fig.14, it describes about the verification experiment 2 conducted in order to verify the effect of the present invention.

[0140]

As shown in Fig.14, in the verification experiment 2, the potential difference of the hair group at the time of having one's hair cut using the hair care method in Example 1, the comparative example 1, and the comparative example 3 and the brush section 30 was measured. The hair care methods in Example 1 and the comparative examples 1 and 3 are the hair care method in the verification experiment 1, and same method.

[0141]

In measurement of potential difference, the hair group after a blow and the electrification quantity of the brush were measured by surface potential meter FMX-003 (made in Simcoe), and both potential difference was compared. Electrification quantity was measured 3 times for every examination bristle hair group mentioned below, and computed average value. The hair group side is electrically charged in straight polarity by friction with the high-density brush hair 31b and a hair group, and the brush side is electrically charged in negative polarity.

[0142]

A 15-g hair group was made into the examination bristle hair group when preparing the

hair group to blow. Predetermined made the number preparations of these examination bristle hair group, and it computed the average value of the potential difference in each examination bristle hair group.

[0143]

In Example 1 and the comparative example 1, the blow supplemented with the hair group by the high-density brush hair 31b, and it performed it by moving the brush section 30 to the other end side from the one end side of a hair group. Electrification quantity was measured after blowing 5 times. In the comparative example 3, the blow was performed by inserting the single track brush hair 31a in a hair group, and moving the brush section 30 to the other end side from the one end side of a hair group. Electrification quantity was measured after blowing 5 times.

[0144]

The potential difference in Example 1 is sufficient smaller than the potential difference in the comparative example 1 and the comparative example 3. The potential difference in the comparative example 1 was a value substantially equivalent to the potential difference in the comparative example 3.

[0145]

By spraying the warm air containing the ion of both positive/negative in Example 1 from these results on the hair group on which tensile force acts, Both the static electricity of straight polarity electrically charged in the hair group side and the static electricity of negative polarity electrically charged in the brush section side can be removed, and, as a result, it can be said that the above-mentioned potential difference was able to be made low.

[0146]

On the other hand, the result of the comparative example 1 is compared with the result of the comparative example 3, and the following things are considered. By spraying an anion on a hair group, the static electricity of negative polarity electrified in the brush section 30 what can remove the static electricity of straight polarity electrified in the hair group side side is unremovable. For this reason, generating of ******, a next door, and static electricity cannot be inhibited for a hair group by the brush section 30 electrically charged in negative polarity, but it is considered that potential difference on the brush section 30 and hair group side has not been improved.

[0147]

(Verification experiment 3)

Fig.15 is the figure showing the conditions of the verification experiment 3 conducted in order to verify the effect of the present invention, and a result. With reference to

Fig.15, it describes about the verification experiment 3 conducted in order to verify the effect of the present invention.

[0148]

As shown in Fig.15, in the verification experiment 3, the number of the split hair in the hair group after having its hair cut using the hair care method in Example 1, the comparative example 1, and the comparative example 3, and piece hair was measured. The hair care method in Example 1 and the comparative examples 1 and 3 is the same as each hair care method in the verification experiment 2.

[0149]

After dividing black hair into 5 g (1500) and tying it up into a knot when preparing the hair group to blow, it cut to an even length in length of 40 cm, and created the hair-bundle. By cutting this hair-bundle to an even length to 30 cm with the scissors for hairdressing, split hair and piece hair removed and it obtained the examination bristle hair group.

[0150]

In Example 1 and the comparative example 1, the blow supplemented with the hair group by the high-density brush hair 31b, and it performed it by moving the brush section 30 to the other end side from the one end side of a hair group. In the hair group after repeating this consecutive 300 times, the number of split hair and piece hair was measured. In the comparative example 3, the single track brush hair 31a is used, and it is 300 times ****** about a hair group.

[0151]

In Example 1, the number of split hair and piece hair became less than the comparative examples 1 and 3. Thereby, it was checked by spraying the warm air containing the ion of both positive/negative on the hair group on which tensile force acts, and having one's hair cut that damage to hair can be inhibited, making tensile force act on a hair group using the hair care method in Example 1.

[0152]

When the ion of both positive/negative and the included warm air were not sprayed from the result of the comparative example 1, it was checked that damage to hair cannot be inhibited sufficiently. It was checked that damage to hair cannot be sufficiently inhibited from the result of the comparative example 3 even if it sprays only an anion on a hair group.

[0153]

By spraying an anion on a hair group, the static electricity of straight polarity electrified in the hair group side is removable. However, since the static electricity of negative

polarity electrified in the brush section 30 side is unremovable, potential difference on the brush section 30 and hair group side is not improvable. as a result, the static electricity by friction with the high-density brush hair 31b and a hair group cannot be inhibited, but hair damages and burns -- it is considered that it became.

[0154]

(Verification experiment 4)

Fig.16 is the figure showing the conditions of the verification experiment 4 conducted in order to verify the effect of the present invention, and a result. With reference to Fig.16, it describes about the verification experiment 4 conducted in order to verify the effect of the present invention.

[0155]

As shown in Fig.16, in the verification experiment 4, the surface state of the hair group after having its hair cut using the hair care method in Example 1, the comparative example 1, and the comparative example 3 was observed. The hair care method in Example 1 and the comparative examples 1 and 3 is the same as each hair care method in the verification experiment 3.

[0156]

It blew consecutive 300 times on the same conditions using the thing same as a hair group for an examination as the verification experiment 3. The hair contained in the hair group after blowing repeatedly consecutive 300 times was observed in super-depth multi-angle lens microscope VHX-500 (made by KEYENCE CORP.). At the time of observation, piece conclusion of the hair was carried out in the abbreviated 15cm position which is a central part, and the neighborhood of a knot was observed.

[0157]

In Example 1, peeling and the float of the cuticle were hardly accepted. On the other hand, in the comparative examples 1 and 3, peeling and the float of the cuticle were accepted and hair was damaged.

[0158]

It can be said that it was checked that damage to hair can be inhibited by spraying the warm air which contains the ion of both positive/negative while making tensile force act on a hair group on the hair group and the high-density brush hair 31b on which tensile force acts, and having one's hair cut also from such a result, using the hair care method in Example 1.

[0159]

(Verification experiment 5)

Fig.17 is the figure showing the conditions of the verification experiment 5 conducted

in order to verify the effect of the present invention, and a result. With reference to Fig.17, it describes about the verification experiment 5 conducted in order to verify the effect of the present invention.

[0160]

As shown in Fig.17, in the verification experiment 5, the rate of change of the length of the hair before and behind hairdressing at the time of having one's hair cut using the hair care method in Examples 1 and 2 and the comparative examples 1-3 was evaluated. The hair care methods in Examples 1 and 2 and the comparative examples 1-3 are the hair care method in the verification experiment 1, and same method.

[0161]

In evaluation of the rate of change of the length of hair, the hair group which has wavy hair and a wave was prepared, and the length of the hair group before a blow and the length of the hair group after a blow were measured.

[0162]

When having prepared the hair group which has wavy hair and a wave, the hair group of 15 g of total weights was created first. Next, this hair group was immersed in water 5 minutes or more, and it twisted around the phi24mm test tube. In this state, the hair group concerned was air-dried for 24 hours or more, and was settled. By removing a hair group from a test tube, the hair group which has wavy hair and a wave was prepared.

[0163]

In measurement of the above-mentioned rate of change, it measured as length of the hair group before blowing first the length of the hair group in the state where it removed from the test tube. In this case, the length before the blow which can be set was set to abbreviated 20cm-23cm. Then, when the high-density brush hair 31b was used, the hair group was caught by the high-density brush hair 31b, when the single track brush hair 31a was used, the single track brush hair 31a was inserted in the hair group, and it blew by moving the brush section 30 to the other end side from the one end side of a hair group. The blow was performed 5 times.

[0164]

The length of the hair group after blowing 5 times (after blow processing) was measured, and it compared with the length of the hair group before a blow. Under the present circumstances, the value which did division of the difference of the length of the hair group after blow processing and the length of the hair group before blow processing by the length of the hair group before blow processing was made into the rate of change.

[0165]
In Example 1, the rate of change has improved wavy hair and a wave most most largely. In Example 2, after Example 1, the rate of change is enlarging and it has improved wavy hair and a wave.
[0166]
In Example 2, the rate of change is enlarging rather than the comparative example 2. It can check improving wavy hair and a wave by comparing the result of Example 2 with the result of the comparative example 2, and spraying the warm air containing the ion of both positive/negative on a hair group.
[0167]
The rate of change is enlarging the comparative example 1 slightly rather than the comparative example 2. It can check improving wavy hair and a wave by comparing the result of the comparative example 1 with the result of the comparative example 2, supplementing with a hair group by the high-density brush hair 31b, and making tensile force act on a hair group.
[0168]
Thus, each of spraying the warm air containing the ion of both positive/negative on a hair group and making tensile force act on a hair group contributes to an improvement of wavy hair and a wave. For this reason, when the hair care method in Examples 1 and 2 including operation of these both is used, the rate of change enlarged as mentioned above, and it has improved wavy hair and a wave. Wavy hair and a wave have been improved more using the high-density brush hair 31b by making bigger tensile force than the single track brush hair 31a act on the hair at a hair group.
[0169]
As mentioned above, by using the hair care method concerning this embodiment from the result of the verification experiments 1-5, damage to hair can be inhibited and it can be said that it was checked that a hair type can be improved.
[0170]
As mentioned above, although described about the embodiment of the invention and the Example, the embodiment and Example which were disclosed this time are [ no ] illustration at points, and restrictive. The range of the present invention is shown by Claim and Claim, an equal meaning, and all the change in within the scope are included.
[Explanations of letters or numerals]
[0171]
1 Hair care equipment and 3 [ A hold part and 11 / A diameter reduction part and 12 / An

operating part and 15 / A suction opening and 15 g / A total weight and 16 / Connection ] An air blower, 3a blower motor, and 4 A heater and 5 A drive circuit and 10

A part and 16a A connection opening, 17 power cords, 18, 19 operation switches, 20 A charged particle generator and 21 A discharge electrode, 22 cover parts, and 22a Through-hole, 23 Covering, and 23a and 23b A locking claw and 23c A shielding rib and 23 d Press rib, 24 An air passage and 25 A cavity part, 26 converging sections, and 26a Input and 27 Ion mixing part, 27a A clamp face and 27b An opening, 30 brush sections, 31 brush hair, 31a Single track brush hair and 31b [ A cavity part, 37 straightening ribs, and 37a / The 1st rib and 37b / The 2nd rib and 37c / The 3rd rib and 38 / The hair and 50 / A circuit board and 51 / Terminal. ] A single track brush hair line, and 33, 33a, 33b and 34 High-density brush hair and 32 An air outlet, 35 base materials, and 36

(12) 特許協力条約に基づいて公開された国際出願

(19) 世界知的所有権機関
国際事務局

(43) 国際公開日
2015 年 12 月 17 日(17.12.2015)

WIPO | PCT

(10) 国際公開番号
WO 2015/190217 A1

(51) 国際特許分類:
*A45D 20/12* (2006.01) *A45D 20/50* (2006.01)

(21) 国際出願番号: PCT/JP2015/063982

(22) 国際出願日: 2015 年 5 月 15 日(15.05.2015)

(25) 国際出願の言語: 日本語

(26) 国際公開の言語: 日本語

(30) 優先権データ:
特願 2014-122296 2014 年 6 月 13 日(13.06.2014) JP
特願 2014-177287 2014 年 9 月 1 日(01.09.2014) JP

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(81) 指定国 (表示のない限り、全ての種類の国内保護が可能): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

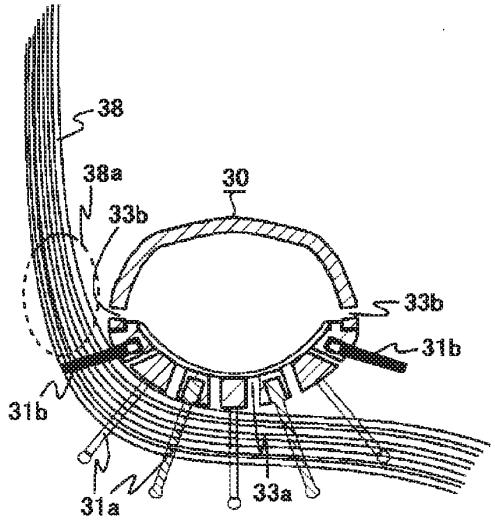
(84) 指定国 (表示のない限り、全ての種類の広域保護が可能). ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), ユーラシア (AM, AZ, BY, KG, KZ, RU, TJ, TM), ヨーロッパ (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

添付公開書類:
— 国際調査報告（条約第 21 条(3)）

(54) Title: HAIR CARE METHOD AND HAIR CARE DEVICE

(54) 発明の名称 : ヘアケア方法およびヘアケア装置

図6




(57) Abstract: A hair care device is provided with: a gripping part provided with a suction opening; a brush part provided with air outlets; an air passage for guiding an air flow from the suction opening to the air outlets; and a blower, a heating device, and a charged-particle generation device that are disposed in the air passage. A plurality of brush bristles constitute single-bristle brush bristle lines and high-density brush-bristle lines, the single-bristle brush-bristle lines being disposed between the high-density brush-bristle lines; and the air outlets (33a, 33b) being disposed in a linear configuration between the single-bristle brush-bristle lines and on both sides of the high-density brush-bristle lines. Using said device in a hair-care method, the air flow is sent from the air outlets (33a, 33b) toward a group of hairs (38) while the group of hairs (38) is combed by the single-bristle brush bristles (31a) or the high-density brush bristles (31b). This causes the air flow, which contains positively and negatively charged particles, to be blown onto the group of hairs (38) and the single-bristle brush bristles (31a) or the high-density brush bristles (31b) while a pulling force is exerted on the group of hairs (38), and causes the hair to be styled.

(57) 要約:

[続葉有]

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ヘアケア方法は、吸込口が設けられた把持部と、吹出口が設けられたブラシ部と、吸込口から吹出口に気流を導く空気通路と、空気通路内に配置される送風機、加熱装置および帯電粒子発生装置とを備え、多数のブラシ毛は、単線ブラシ毛列と高密度ブラシ毛列とを構成し、単線ブラシ毛列は、高密度ブラシ毛列の間に配置され、単線ブラシ毛列間および高密度ブラシ毛列の両側に吹出口（３３ａ，３３ｂ）を列状に配置したヘアケア装置を用いて、単線ブラシ毛（３１ａ）または高密度ブラシ毛（３１ｂ）で毛髪群（３８）を梳かしながら吹出口（３３ａ，３３ｂ）から気流を毛髪群（３８）に向けて送出することにより毛髪群（３８）に引張力を作用させながら正負両方の帯電粒子を含む気流を毛髪群（３８）および、単線ブラシ毛（３１ａ）または高密度ブラシ毛（３１ｂ）に吹き付けて整髪する。

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# 明　細　書

## 発明の名称 ： ヘアケア方法およびヘアケア装置

## 技術分野

[0001] 本発明は、帯電粒子を発生する帯電粒子発生装置を具備するヘアケア装置を用いて整髪するヘアケア方法およびヘアケア装置に関する。

## 背景技術

[0002] 従来より、整髪する際には、髪を梳きながら温風を毛髪に送出するヘアドライヤや、髪を梳きながら負イオンを含む温風を毛髪に送出するヘアケア装置が用いられている。このようなヘアドライヤやヘアケア装置が開示された文献としては、特開２００７－２２９３１６号公報（特許文献１）および特開２０１１－１８３２２１号公報（特許文献２）等が挙げられる。

[0003] 特許文献１に開示のヘアドライヤは、吐出口が設けられた筒状部の筐体と、筐体内に配置され、吐出口から温風を送出するための加熱装置および送風機とを備える。筐体に設けられた植設面には、筐体の軸線方向に沿って獣毛（高密度ブラシ毛）および樹脂毛（単線ブラシ毛）がそれぞれ列設されている。軸線方向に垂直な方向における最外側の列には樹脂毛のみが列設され、最外側の列の内側には樹脂毛および獣毛が列設されている。

[0004] このようなヘアドライヤにて整髪する際には、獣毛により頭髪（毛髪群）に引張力を作用させながら温風を毛髪群に吹き付ける。これにより、毛髪の繊維を引き締めて髪のつや等の髪質を向上させることができる。

[0005] 特許文献２に開示のヘアケア装置は、前面に吹出口、イオン出口および一群の単線ブラシ毛が設けられるとともに両側側面にテンションコームが設けられたブラシ枠体と、ブラシ枠体に連結される本体部と、本体部内に配置され、吹出口およびイオン出口から負イオンを含む温風を送出するための送風機、加熱器および放電体を備える。

[0006] このようなヘアケア装置を用いて整髪する際には、たとえばカール処理を行なう際には、ヘアケア装置を周方向に回転させつつテンションコームにて

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毛髪を補足しながら、毛髪群を梳く。これにより、毛髪群に確実に引張力を作用させることができるため、カール処理を効果的に行なうことができる。

[0007] 特許３８７０６１７号公報（特許文献３）に開示のヘアブラシに温風発生装置を備えたヘアケア装置は、使用者が把持する柱状の把持部と、把持部の軸方向に着脱可能に連結されるブラシ部とを備えている。ブラシ部の周面には周方向の一部を除く約半周の範囲に多数のブラシ毛が複数列状に立設される。ブラシ毛の列と列の間には温風を吹きだす吹出口が列状に設けられる。

[0008] 把持部は一端に吸込口が開口して内部に空気通路が形成される。空気通路内には送風機と加熱装置が配される。空気通路はブラシ部側の端部でブラシ部の方向に気流を送出する吹出口が先端に開口する。

[0009] 上記構成のヘアケア装置において、使用者は把持部を把持してブラシ毛を頭髪に摺動させて整髪を行う。この時、送風機及び加熱装置が駆動されると、吸込口から空気通路内に外気が流入して加熱された気流が吹出口から送出される。これにより、ブラシ毛に接触する頭髪に温風が与えられる。また、特許文献１にはブラシ毛最外列の一列内側には、頭髪を捕まえて引っ張り力をかける高密度ブラシ毛が設けられ、加温された頭髪を整形することができるヘアケア装置が開示される。

[0010] また、特許４２３２６９５号公報（特許文献４）には、温風発生装置を備えたヘアブラシに更にイオン発生装置を備えて、整髪とともに頭髪にイオンを吹き付けることで毛髪をしっとりとさせるヘアドライヤが開示される。

## 先行技術文献

### 特許文献

[0011] 特許文献1：特開２００７－２２９３１６号公報

特許文献2：特開２０１１－１８３２２１号公報

特許文献3：特許３８７０６１７号公報

特許文献4：特許４２３２６９５号公報

## 発明の概要

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## 発明が解決しようとする課題

[0012] しかしながら、特許文献１に開示のヘアドライヤを用いた整髪方法のように、毛髪群に引張力を作用させながら温風を毛髪群に吹き付けるだけでは、獣毛で毛髪群を梳いた場合に発生する静電気を十分に除去することができない。このため、毛髪群が損傷されてしまう。

[0013] 一方、特許文献２に開示のヘアケア装置を用いた整髪方法のように、ブラシ枠体の側面に設けられたテンションコームにて毛髪を補足して毛髪を梳く場合には、イオン出口は側面と異なる枠体の前面に設けられているため、テンションコームに補足されている部分の毛髪群に負イオンを直接送出することが困難である。また、負イオンのみを吹き付ける場合には、毛髪側に発生した静電気を除去することは可能であるが、ブラシ枠側に発生した静電気を除去することが困難である。

[0014] このように、特許文献２に開示のヘアケア装置を用いて整髪した場合であっても、毛髪群とブラシ枠との摩擦により発生する静電気を十分に除去することができず、毛髪群が損傷されてしまう。

[0015] また、上記従来のヘアケア装置によると、温風によって乾燥した頭髪がブラシ毛で摩擦されることによって静電気が発生し、良好な整髪を行うことができない問題があった。また、イオン発生装置を備えるヘアドライヤであっても頭髪とイオンの接触が十分とは言えず、イオンの効果を十分に享受できずに希望通りの整髪ができないことがあった。

[0016] 本発明は、毛髪の損傷を抑制でき、髪質を向上させることができるヘアケア方法およびヘアケア装置を提供することを目的とする。

[0017] さらに本発明は、イオン等の帯電粒子を発生する帯電粒子発生装置を備えるヘアケア装置において、整髪を良好に行うことのできるヘアケア装置を提供することを目的とする。

## 課題を解決するための手段

[0018] 本発明に基づくヘアケア方法は、ヘアケア装置を用いたヘアケア方法であって、上記ヘアケア装置として、吸込口が設けられた柱状の把持部と、上記

把持部の軸方向に連結し、周面に多数のブラシ毛が立設されるとともに上記ブラシ毛の周囲に吹出口が設けられたブラシ部と、上記把持部及び上記ブラシ部の内部に連通して設けられるとともに上記吸込口から上記吹出口に気流を導く空気通路と、上記空気通路内に配置される送風機と、上記空気通路内に配置され、上記気流を加熱可能な加熱装置と、上記空気通路内に配置され、正極性および負極性の両方の帯電粒子を発生させる帯電粒子発生装置と、を備え、多数の上記ブラシ毛は、単線から成る単線ブラシ毛を列設させた単線ブラシ毛列と、上記単線ブラシ毛列の延在方向と平行な方向に毛束からなる高密度ブラシ毛を列設させた高密度ブラシ毛列とを構成し、上記単線ブラシ毛列は、上記周面の周方向に互いに離間して配置された上記高密度ブラシ毛列の間に配置され、上記単線ブラシ毛列間および上記周方向における上記高密度ブラシ毛列の両側に上記吹出口を列状に配置したヘアケア装置を用いて、上記単線ブラシ毛または上記高密度ブラシ毛で毛髪群を梳かしながら上記吹出口から上記気流を当該毛髪群に向けて送出することにより、毛髪群に引張力を作用させながら上記正極性および上記負極性の両方の上記帯電粒子を含む上記気流を上記引張力が作用する毛髪群および、単線ブラシ毛または上記高密度ブラシ毛に吹き付けて整髪する。

[0019] 上記本発明に基づくヘアケア方法にあっては、１００ｍｍ／ｓｅｃの速さで上記ヘアケア装置を上記毛髪群の根本側から毛先側に移動させた場合に上記毛髪群に作用する上記引張力が、０．５Ｎ以上１０．０Ｎ以下であることが好ましい。

[0020] 上記本発明に基づくヘアケア方法にあっては、上記気流の温度が、上記ブラシ毛の先端近傍において３０℃以上２００℃以下であることが好ましい。

[0021] 上記本発明に基づくヘアケア方法にあっては、上記帯電粒子発生装置から上記吹出口に至るまでの上記空気通路内における上記正極性の上記帯電粒子および上記負極性の上記帯電粒子のいずれかの濃度が、５０００個／ｃｍ$^3$より大きく５００００００個／ｃｍ$^3$より小さいことが好ましい。

[0022] 本発明に基づくヘアケア装置は、吸込口を開口して柱状に形成される把持

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部と、上記把持部の軸方向に連結して周面に多数のブラシ毛を立設するとともに上記ブラシ毛間に吹出口を開口するブラシ部と、上記把持部及び上記ブラシ部の内部に連通して設けられるとともに上記吸込口から上記吹出口に気流を導く空気通路と、上記空気通路内に配される送風機と、を備えるヘアケア装置において、上記ブラシ毛の外側を囲むように頭髪を捕捉して引っ張る高密度ブラシ毛列を配するとともに高密度ブラシ毛列の両側部に吹出口を設けたことを特徴としている。

[0023] このような構成によると、使用者は把持部を把持し、ブラシ毛を頭髪に摺動させてブラッシングして整髪を行う場合、送風機が駆動され、吸込口から流入する外気が空気通路内を流通し、ブラシ部のブラシ毛列間に設ける吹出口から放出される。ブラシ毛列を囲むように頭髪を捕捉して引っ張る高密度ブラシ毛を設けたので、ブラシ部を回転させて高密度ブラシ毛で頭髪を捕捉するように梳かせば、頭髪を引き延ばした部分に吹出口からの気流を当てながら整髪することができる。

[0024] また上記本発明に基づくヘアケア装置は、上記ブラシ部内部の空気通路内に気流流通方向に交差する方向の面を有する整流リブを設けたことを特徴としている。このような構成によって、上記空気通路内を流通する気流を、上記ブラシ部に設けた複数の吹出口から勢いよく噴出させることができる。

[0025] また上記本発明に基づくヘアケア装置は、上記整流リブを複数設け、上記空気通路内の下流側ほどリブの突き出し長さが長くなることを特徴としている。このような構成によって、上記空気通路内を進行する気流も、上記ブラシ部に設けた複数の吹出口から進行方向にわたって均等に噴出させることができる。

[0026] また上記本発明に基づくヘアケア装置は、上記送風機の下流に流通する気流を加熱する加熱装置をさらに備えることを特徴としている。このような構成によって、気流を加熱して吹出口から送出することで、頭髪に温風を照射させて効率よく整髪することができる。

[0027] また上記本発明に基づくヘアケア装置は、上記送風機の下流にイオン等の

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帯電粒子を発生する帯電粒子発生装置をさらに備え、発生した帯電粒子とともに上記空気通路内を流通する気流を吹出口から送出する。このような構成によって、頭髪に帯電粒子を効率的に付着させて整髪とともに潤いを与え、頭髪に帯電した静電気を除去することができる。

## 発明の効果

[0028] 本発明によれば、毛髪の損傷を抑制でき、髪質を向上させることができるヘアケア方法を提供することができる。

[0029] また、本発明によると、ヘアケア装置において、ブラシ毛列を囲むように頭髪を捕捉して引っ張ることができる高密度ブラシ毛列を設けたので、頭髪に十分な引張力を与えながら整髪することができる。また、高密度ブラシ毛列の両側に気流の吹出口が配されるので、前記高密度ブラシ毛で頭髪を引き伸ばしながら加熱された空気と帯電粒子を吹き付けることができる。従って、頭髪の保湿や除電を十分行うことができ、癖取りなど良好な整髪を行うことができる。

## 図面の簡単な説明

[0030] [図1]本発明の第１実施形態のヘアケア装置を示す外観斜視図である。

[図2]本発明の第１実施形態のヘアケア装置を示す側面断面図である。

[図3]本発明の第１実施形態のヘアケア装置を示す上面断面図である。

[図4]本発明の第１実施形態のヘアケア装置に搭載する帯電粒子発生装置の概略外観図である。

[図5]本発明の第１実施形態のヘアケア装置のブラシ部の内部構造を示す軸方向断面図である。

[図6]本発明の第１実施形態のヘアケア装置のブラシ部の内部構造を示す軸に垂直な方向の断面図である。

[図7]本発明の第１実施形態のヘアケア装置を用いたヘアケア方法の一例を示す図である。

[図8]本発明の第１実施形態のヘアケア装置を用いたヘアケア方法のその他の例を示す図である。

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[図9]本発明の第２実施形態のヘアケア装置を示す外観斜視図である。

[図10]本発明の第２実施形態のヘアケア装置のブラシ部の内部構造を示す軸に垂直な方向の断面図である。

[図11]本発明の第２実施形態のヘアケア装置を用いたヘアケア方法の一例を示す図である。

[図12]本発明の効果を検証するために行なった検証実験１の条件および結果を示す図である。

[図13]図１２に示す検証実験１の結果を数値で示す図である。

[図14]本発明の効果を検証するために行なった検証実験２の条件および結果を示す図である。

[図15]本発明の効果を検証するために行なった検証実験３の条件および結果を示す図である。

[図16]本発明の効果を検証するために行なった検証実験４の条件および結果を示す図である。

[図17]本発明の効果を検証するために行なった検証実験５の条件および結果を示す図である。

## 発明を実施するための形態

[0031] 以下、本発明の実施の形態について、図を参照して詳細に説明する。なお、以下に示す実施の形態においては、同一のまたは共通する部分について図中同一の符号を付し、その説明は繰り返さない。

[0032] ＜第１実施形態＞

図１は、本実施形態のヘアケア装置の外観斜視図である。図２および図３は、本実施形態のヘアケア装置の側面断面図及び上面断面図である。図１から図３を参照して、本実施の形態に係るヘアケア装置１について説明する。

[0033] ヘアケア装置１はブラシ付きヘアドライヤを構成し、使用者が把持する柱状の把持部１０と、把持部１０の軸方向に着脱可能に連結されるブラシ部３０とを備えている。ブラシ部３０における周方向の一部を除く約半周の範囲には、多数のブラシ毛３１が列状に立設されている。

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[0034] ブラシ部３０は、ブラシ毛３１の周囲に設けられた多数の吹出口３３を含む。吹出口３３は、小孔から成る吹出口３３aと、ブラシ部３０側面に設けられた吹出口３３ｂとを含む。吹出口３３ａは、ブラシ毛３１の列間に列状に設けられている。吹出口３３ｂは、ブラシ部３０の周方向においてブラシ毛３１の植設領域を間に挟みこむようにブラシ部３０の両側面に列状に設けられている。

[0035] 把持部１０の軸方向における一端から電源コード１７が導出されている。把持部１０は、電源コード１７の周囲に設けられた多数の小孔から成る吸込口１５を有する。図２に示すように把持部１０のブラシ部３０側の端部には操作スイッチ１８、１９を有した操作部１２が設けられる。操作スイッチ１８により後述する送風機３及び帯電粒子発生装置２０のオンオフが切り替えられる。操作スイッチ１９により後述する加熱装置としてのヒータ４のオンオフが切り替えられる。

[0036] また、把持部１０には操作部１２に隣接して縮径部１１が設けられる。縮径部１１は外周面を円錐面に形成され、吸込口１５側から操作部１２に向かって把持部１０の外径を縮径する。使用者は操作部１２に隣接する外径の小さい縮径部１１を把持することによって、ヘアケア装置１の移動操作及び操作スイッチ１８、１９の切替え操作を容易に行うことができる。

[0037] 把持部１０の軸方向における他端にはブラシ部３０に嵌合する連結部１６が設けられている。連結部１６の端面に連結口１６ａが開口する。連結口１６ａは異物侵入防止のためにメッシュ状や連続した６角形状に形成した格子で保護される。

[0038] 把持部１０の内部には空洞部２５が設けられ、ブラシ部３０の内部には空洞部３６が設けられる。空洞部２５、および空洞部３６によって把持部１０及びブラシ部３０の内部に連通する空気通路２４が形成される。空洞部３６は連結口１６ａの中心に対して一方に偏って形成され、連結口１６ａとのずれ部分に吹出口３４が設けられる。ブラシ部３０の一方端に接続部が設けられ、連結部１６と勘合するように繋がる。吹出口３４から見てブラシ部３０

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の先端方向に向かってブラシ毛３１が配される。

[0039] 空洞部２５内には吸込口１５に面して送風機３が配される。送風機３は送風機モータ３ａにより駆動される軸流ファンを備える。送風機３を遠心ファンにより形成してもよい。送風機３を駆動すると空気通路２４によって吸込口１５から吹出口３３、および吹出口３４に気流が導かれる。吹出口３３は、ブラシ毛列間に配される吹出口３３ａと、ブラシ毛列の領域の外側に配される３３ｂとを含む。

[0040] 空洞部２５内の送風機３の下流には隣接して駆動回路５が配される。駆動回路５によって送風機３や、ヒータ４及び帯電粒子発生装置２０が駆動される。空気通路２４内に駆動回路５を配置することにより、空気通路２４を流通する気流によって送風機モータ３ａおよび駆動回路５を冷却することができる。

[0041] 空洞部２５内には送風機３の下流で内壁面を傾斜して流路を絞る絞り部２６が設けられる。縮径部１１の外周面は絞り部２６に沿って形成され、縮径部１１の外径を容易に縮径することができる。絞り部２６内にはコイル形状のヒータ４が配され、気流を昇温する。絞り部２６の下流にはイオン混合部２７が設けられる。

[0042] イオン混合部２７は絞り部２６の下流端の流入口２６ａと略等しい流路面積を有している。絞り部２６を流通する気流は流路を絞られるため流速が増加し、流路の中央部に向かって案内される。このため、イオン混合部２７の中央部をヒータ４により昇温された気流が流通する。イオン混合部２７の流路面積を流入口２６ａよりも広くしてもよい。

[0043] イオン混合部２７の周面には操作部１２の外面に露出した平面の取付面２７ａが形成され、取付面２７ａ上に平面視矩形の帯電粒子発生装置２０が着脱可能に配される。操作部１２の縮径部１１に隣接した壁面には図示していない接点が露出しており、駆動回路５に接続される。帯電粒子発生装置２０の端面には接点を介して電力供給される端子５１が設けられる。帯電粒子発生装置２０の外周面は操作部１２に対して着脱されるカバー２３により覆わ

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れる。

[0044] 図４は、本実施形態のヘアケア装置に搭載する帯電粒子発生装置の概略外観図である。図４を参照して、帯電粒子発生装置２０について説明する。本実施の形態においては、帯電粒子発生装置として、正負のイオンを発生するイオン発生装置を例示して説明する。

[0045] 帯電粒子発生装置２０は一対の針状の放電電極２１を有している。帯電粒子発生装置２０は取付面２７ａ上に開口する開口部２７ｂを介して空気通路２４に臨む。放電電極２１は帯電粒子発生装置２０の前部である空気通路２４の気流流通方向の一方の端部に配される。これにより、帯電粒子発生装置２０の一方の端部が開口部２７ｂに面して配される。帯電粒子発生装置２０の放電電極２１から離れた後部である他方の端部には回路基板５０が内装され、後端面には端子５１が設けられる。

[0046] 帯電粒子発生装置２０には放電電極２１の上方を覆うカバー部２２が設けられる。カバー部２２には、放電電極２１が臨む貫通孔２２ａが開口している。カバー部２２によって帯電粒子発生装置２０を着脱する際に使用者の手指と放電電極２１との接触を防止して放電電極２１が保護される。

[0047] 帯電粒子発生装置２０は、内蔵する回路基板５０で高圧電気を発生させる。一方の放電電極２１には正の高電圧パルスが印加され、他方の放電電極２１には負の高電圧パルスが印加される。これにより、放電電極２１の先端でコロナ放電が発生する。正電圧を印加した放電電極２１のコロナ放電により空気中の水分子が電離して水素イオンが生成される。この水素イオンが溶媒和エネルギーにより空気中の水分子とクラスタリングする。これにより、正極性の帯電粒子として$H^+(H_2O)_m$（mは任意の自然数）から成る空気イオン（正のイオン）が発生し、気流に混合される。

[0048] また、負電圧を印加した放電電極２１のコロナ放電により空気中の酸素分子または水分子が電離して酸素イオンが生成される。この酸素イオンが溶媒和エネルギーにより空気中の水分子とクラスタリングする。これにより負極性の帯電粒子として、$O_2^-(H_2O)_n$（nは任意の自然数）から成る空気イ

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オン（負のイオン）が発生し、気流に混合される。

[0049] この時、一対の放電電極２１はイオン混合部２７の周方向に所定量離れてそれぞれイオン混合部２７の周部に配される。また、イオン混合部２７の上流の絞り部２６により流速が増加した気流がイオン混合部２７の中央部を流通する。このため、周部の放電電極２１で発生した正負両方のイオンがイオン混合部２７の中央部を流通する気流に負圧により吸引されて混合される。

[0050] イオン混合部２７の周部を気流が流通すると、気流によって空気通路２４の内壁に衝突して消滅するイオンが増加する。このため、絞り部２６を通過した気流にイオン混合部２７の中央部を流通させて放電電極２１で発生した正負のイオンを吸引して混合することで、イオンの消滅を低減することができる。また、イオン混合部２７の中央部に放電電極２１を配置すると空気通路２４の圧力損失が大きくなる。このため、放電電極２１をイオン混合部２７の周部に配置することで送風効率を向上させることができる。

[0051] また、図２に示すように、絞り部２６の軸心に対して放電電極２１と同じ側に空洞部３６が配され、絞り部２６の軸心に対して放電電極２１の反対側にブラシ毛３１が配される。これにより、放電電極２１で発生したイオンが円滑に空洞部３６に導かれる。従って、ブラシ毛３１間の吹出口３３ａ及びブラシ部３０側面の吹出口３３ｂから正負のイオンを多く送出することができる。

[0052] この場合において、帯電粒子発生装置２０から吹出口３４、３３ａ、３３ｂに至るまでの空気通路２４内における正のイオンおよび負のイオンのいずれかの濃度が、５０００個／ｃｍ$^3$より大きく、５００００００個／ｃｍ$^3$より小さいことが好ましい。

[0053] 正のイオンおよび負のイオンのいずれかの濃度が、５０００個／ｃｍ$^3$以下である場合には、後述する整髪の際に、高密度ブラシ毛３１ｂと頭髪（毛髪群）３８（図７、図８参照）との摩擦により発生する静電気を十分に除去することができない場合がある。この結果、ツヤの改善効果、キューティクルのダメージ抑制効果、枝毛・切れ毛の発生を抑制する効果等を十分に発揮す

ることができない場合がある。

[0054] 正のイオンおよび負のイオンのいずれかの濃度が、５０００００００個／ｃｍ$^3$以上である場合には、正のイオンと負のイオン同士が衝突することにより、正負両方の空気イオンが消滅してしまう。この結果、十分な量の正のイオンおよび負のイオンの両方を頭髪３８に供給することができず、ツヤの改善効果、キューティクルのダメージ抑制効果、枝毛・切れ毛の発生を抑制する効果等を十分に発揮することができない場合がある。

[0055] カバー２３は樹脂成形品により形成され、操作部１２の軸方向にスライドして開閉する。カバー２３のブラシ部３０側の両側部には係止爪２３ａが設けられ、縮径部１１側の両側部には係止爪２３ｂが設けられる。また、カバー２３のブラシ部３０側の端面には押圧リブ２３ｄが設けられる。

[0056] また、カバー２３を端子側から放電電極２１側にスライドして取り外し、帯電粒子発生装置２０を着脱することができ、放電電極２１の清掃や帯電粒子発生装置２０の交換を行うことができる。

[0057] カバー２３の内面には帯電粒子発生装置２０の外周面に近接する格子状の遮蔽リブ２３ｃが設けられる。遮蔽リブ２３ｃはカバー２３の内側で帯電粒子発生装置２０の前部と後部との間を遮蔽する。帯電粒子発生装置２０は後端面に配した端子５１が接点に接触し、開口部２７ｂと帯電粒子発生装置２０の前端面との隙間から高温の気流が漏出する場合がある。このとき、該気流は遮蔽リブ２３ｃによって遮蔽され、帯電粒子発生装置２０の後部に配した回路基板５０の昇温を防止することができる。

[0058] 図５は、本実施形態のヘアケア装置のブラシ部の内部構造を示す軸方向断面図であり、ブラシ部３０の軸線に沿った断面図である。図６は、本実施形態のヘアケア装置のブラシ部の内部構造を示す軸に垂直な方向の断面図であり、図２中のＡ－Ａ線で切断し矢印方向に見た断面図である。図５および図６を参照して、ブラシ部３０の構造について説明する。

[0059] 図５および図６に示すように、複数のブラシ毛３１は、後述する複数の単線ブラシ毛列３２と後述する２本の高密度ブラシ毛列（不図）とを構成する

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[0060] 単線ブラシ毛列３２は、先端部が丸く形成された単毛のブラシ毛（単線ブラシ毛）３１ａをブラシ部３０の軸方向に沿って列設されることにより形成される。単線ブラシ毛列３２は、ブラシ部３０の周方向の一部を除く約半周の範囲（周面）に所定の間隔で複数列並設される。

[0061] 単線ブラシ毛列３２を構成する単線（単毛）の単線ブラシ毛３１ａは、ポリアセタール等の樹脂により太さ１ｍｍ前後、長さ十数ｍｍに形成された単毛であり、ゴム等により形成されるベース材３５上に植設される。

[0062] 高密度ブラシ毛列は、細い毛を複数本束にした高密度ブラシ毛３１ｂをブラシ部３０の軸方向に沿って列設されることにより形成される。２本の高密度ブラシ毛列は、ブラシ部３０の周方向に互いに離間して配置される。２本の高密度ブラシ毛列は、ブラシ部３０の軸方向に交差する周方向に複数の単線ブラシ毛列３２を挟み込むように配置される。

[0063] 高密度ブラシ毛３１ｂは、具体的には豚やイノシシなどの獣毛を数本～十数本束ねたものが単位となっている。獣毛は、単線ブラシ毛３１ａよりも細く短いものが使用される。獣毛としては、静電気を発生させにくいものが好ましい。また、獣毛を数本束ねることにより、その隙間に頭髪３８を捕捉して適度な摩擦を発生させることができる。このため、高密度ブラシ毛３１ｂで頭髪を梳く場合には、単線ブラシ毛３１ａで梳く場合よりも大きな引張力を頭髪３８に作用させることができる。

[0064] たとえば重量が１５ｇであり長さが５００ｍｍである毛髪群に対して毛髪群の根本側から毛先側に１００ｍｍ／ｓｅｃの速さでヘアケア装置１を移動させた場合に、０．５Ｎより大きく１０．０Ｎより小さい範囲で引張力が毛髪群に作用することが好ましい。

[0065] 引張力が０．５Ｎ以下では、頭髪３８の有するくせ毛・うねりを十分に改善することができない場合がある。一方、引張力が１０．０Ｎ以上では、毛髪が抜けたり、破断したりするおそれがある。

[0066] 小さい範囲の引張力は、単線ブラシ毛３１ａで頭髪３８を梳くことにより

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、当該頭髪３８に作用させることができる。たとえば単線ブラシ毛３１ａでは、０．５Ｎより大きく３．０Ｎより小さい範囲で引張力を作用させることができ、１．５Ｎ程度の引張力を作用させることが好ましい。

[0067] 大きい範囲の引張力は、高密度ブラシ毛３１ｂで頭髪３８を梳くことにより、当該頭髪３８に作用させることができる。たとえば高密度ブラシ毛３１ｂでは、３．０Ｎ以上１０．０Ｎより小さい範囲で引張力を作用させることができ、５．０Ｎ程度の引張力を作用させることが好ましい。

[0068] なお、高密度ブラシ毛３１ｂを構成する細い毛には、獣毛の他に樹脂毛なども使用することができる。この場合には、適度の柔軟性と毛同士に適度な隙間を形成でき、頭髪３８を捕捉して適度な摩擦を発生させることができる樹脂毛が好ましい。

[0069] 吹出口３３は、ベース材３５に設けられ、隣接する単線ブラシ毛列３２の間のそれぞれに配される吹出口３３ａと、周方向の両端最外列に設けられる高密度ブラシ毛３１ｂのブラシ列のさらに外側であって、ブラシ部３０の両側面に設けられる吹出口３３ｂとを有する。

[0070] ブラシ部３０の内部には、空洞部３６が単線ブラシ毛列３２方向に形成されており、送風機３によって帯電粒子を含む空気が空洞部３６の軸方向に供給される。この気流をブラシ部３０に開口する吹出口３３ａ、吹出口３３ｂに向けて方向変更させるために気流進行方向と交差するように整流リブ３７が設けられる。整流リブ３７は、気流の風上から順に第１リブ３７ａ、第２リブ３７ｂ、第３リブ３７ｃと並び、第１リブ、第２リブ、第３リブの順に下方への突き出し長さが長くなっている。

[0071] 送風機３によって供給された空気は空洞部３６を先端方向に向けて進み、吹出口３３ａ、吹出口３３ｂからブラシ部３０の径方向に噴出するために、先端に近づくにしたがって次第に体積が減少する。整流リブ３７をこのような形状及び配置とすることで、気流の衝突面を次第に大きくし、気流の体積が減少しても効率よく吹出口３３ａ、吹出口３３ｂから噴出させることができる。

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[0072] 上記構成のヘアケア装置１において、整髪を行う場合の動作説明を行う。使用者が把持部１０を把持して操作スイッチ１８、１９を操作することにより送風機３、ヒータ４及び帯電粒子発生装置２０が駆動される。これにより、吸込口１５を介して空気通路２４内に外気が流入する。空気通路２４を流通する空気は絞り部２６でヒータ４により昇温され、流入口２６ａを介してイオン混合部２７に流入する。

[0073] イオン混合部２７に流入した気流は、イオン混合部２７の中央部を高速で流通し、帯電粒子発生装置２０の放電電極２１から発生したイオンを負圧により吸引して混合する。イオンを含む気流は、連結口１６ａを通過して一部が吹出口３４からブラシ毛３１間に軸方向に送出される。

[0074] また、イオンを含む気流は空洞部３６を流通して吹出口３３ａによって単線ブラシ毛３１ａ間から径方向に、同時に吹出口３３ｂからブラシ部３０の側面方向に送出される。使用者が把持部１０を把持して頭髪３８に沿って移動させることにより、単線ブラシ毛３１ａが頭髪３８に摺動してブラッシングされる。この時、吹出口３３、および吹出口３４から送出された高温の気流によって頭髪３８を乾燥させるとともに単線ブラシ毛３１ａにより整髪が行われる。

[0075] また、吹出口３３、および吹出口３４から並行して単線ブラシ毛３１ａ間にイオンを含む気流が送出されるため、頭髪３８に到達、付着するイオンを増加させることができる。イオンによって頭髪３８に潤いを与えるとともに、単線ブラシ毛３１ａとの摺動により発生した頭髪３８の静電気が除電される。これにより、頭髪３８を保湿し、静電気による頭髪の広がりを抑制して良好な整髪を行うことができる。

[0076] 図７および図８を参照して、本実施の形態に係るヘアケア装置１を用いたヘアケア方法について説明する。図示はしていないが、図７、図８ともに頭髪３８の左側に人の頭部があり、頭髪３８は上端が頭部側であって、人の頭部と繋がっているものとする。

[0077] 本実施の形態に係るヘアケア装置１を用いたヘアケア方法は、単線ブラシ

毛３１ａを用いて毛髪群を梳いて整髪する方法と、高密度ブラシ毛３１ｂを用いて毛髪群を梳いて整髪する方法とを含む。なお、単線ブラシ毛３１ａを用いた整髪方法と、高密度ブラシ毛３１ｂを用いた整髪方法とは、切り替えることができる。

[0078] 図７は、本実施形態のヘアケア装置を用いたヘアケア方法の一例を示す図である。図７に示すように、単線ブラシ毛３１ａにて毛髪群を梳いて整髪する方法にあっては、単線ブラシ毛３１ａを頭髪３８に挿入してヘアケア装置１を頭髪３８の根本側から毛先側へ移動させる。これにより、単線ブラシ毛３１ａが頭髪３８と接触して摺動される。この時にブラシ部３０の吹出口３３ａから温風と正負両方のイオンが噴出されて頭髪３８および単線ブラシ毛３１ａに吹き付けられる。

[0079] これにより、単線ブラシ毛３１ａと頭髪３８との摩擦により発生して、頭髪３８に帯電した正極性の静電気と、単線ブラシ毛３１ａに帯電した負極性の静電気とを除去することができる。この結果、ブラッシングの際に発生する静電気を大幅に抑制することができ、静電気による毛髪の損傷を抑制することができる。

[0080] また、単線ブラシ毛３１ａにて頭髪３８を捕捉して引張力を作用させた状態で正負両方のイオンを含む温風を頭髪３８に吹き付けることにより、頭髪３８に潤いを与えつつ、くせ毛・うねり等の髪質を改善することができる。また、髪のつやも改善させることができる。

[0081] 図８は、本実施の形態のヘアケア装置を用いたヘアケア方法のその他の例を示す図である。図８に示すように、高密度ブラシ毛３１ｂにて毛髪群を梳いて整髪する方法にあっては、高密度ブラシ毛３１ｂが頭髪３８に挿入されるようにブラシ毛３１を頭髪３８に挿入する。この状態で、ヘアケア装置１を頭髪３８の根本側から毛先側に移動させる。

[0082] 単線ブラシ毛３１ａを用いた整髪方法から高密度ブラシ毛３１ｂを用いた整髪方法へヘアケア方法を切り替える際には、使用者は、適当な位置で把持部１０を持つ手を約９０度捩じって高密度ブラシ毛３１ｂが頭髪３８を捕捉

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する方向にブラシ部３０を回転させる。これにより、高密度ブラシ毛３１ｂが頭髪３８に挿入される。なお、高密度ブラシ毛３１ｂを用いた整髪方法のみが実施されてもよい。

[0083] ここで、高密度ブラシ毛３１ｂは、獣毛を数本束ねることにより構成されているため、獣毛の隙間に頭髪３８が入り込むことにより、頭髪３８を捕捉することができる。このため、高密度ブラシ毛３１ｂは、単線ブラシ毛３１ａと比較して毛髪との摩擦が大きくなるように構成されている。これにより、高密度ブラシ毛３１ｂにて頭髪３８を梳くことにより、単線ブラシ毛３１ａで梳く場合よりも大きな引張力を頭髪３８に作用させることができる。

[0084] さらに、高密度ブラシ毛３１ｂから見て高密度ブラシ毛３１ｂの進行方向（毛髪を梳かす方向）の後方側に位置する領域３８ａには、高密度ブラシ毛３１ｂの外側でブラシ部３０の側面に位置する吹出口３３ｂから正負両方のイオンを含む温風が吹き付けられる。また、高密度ブラシ毛３１ｂの内側に位置する吹出口３３ａから正負両方のイオンを含む温風が高密度ブラシ毛３１ｂにも吹き付けられる。

[0085] これにより、高密度ブラシ毛３１ｂと頭髪３８との摩擦により発生して、頭髪３８に帯電した正極性の静電気と、高密度ブラシ毛３１ｂに帯電した負極性の静電気とを除去することができる。この結果、ブラッシングの際に発生する静電気を大幅に抑制することができ、静電気による毛髪の損傷を抑制することができる。

[0086] また、単線ブラシ毛３１ａのみを使用した場合よりも大きな引張力を作用させた状態で正負両方のイオンを含む温風を頭髪３８に吹き付けることにより、頭髪３８に潤いを与えつつ、くせ毛・うねり等の髪質を効果的に改善することができる。これらの結果、髪のつやも効果的に改善させることができる。

[0087] 尚、操作スイッチ１９の切り替えによってヒータ４をオフの状態で送風機３及び帯電粒子発生装置２０を駆動することもできる。この場合には、正負のイオンを含む冷風が吹出口３４から送出されることにより、暑い時期など

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に頭部の熱を取るとともにイオンによって頭髪３８に潤いを与え、整髪時の静電気を除去することができる。

[0088] このように吹出口３３から送出される気流は、温風であっても冷風であってもよい。この場合には、吹出口３３から送出される気流の温度は、たとえば環境温度が３０℃の場合には、ブラシ毛３１の先端近傍において３０℃以上２００℃以下であることが好ましく、５０℃以上１２０℃以下であることがさらに好ましい。

[0089] ブラシ毛３１の先端近傍において気流の温度が３０℃よりも低い場合には、熱に因るくせ毛・うねりの改善効果が低くなる。一方、ブラシ毛３１の先端近傍において気流の温度が１２０℃よりも高い場合には、短時間のブローであっても毛髪を傷めるおそれがある。また、ブラシ毛３１の先端近傍において気流の温度が５０℃以上１２０℃以下となることにより、程よい熱の効果によってくせ毛・うねりをより改善することができる。

[0090] 以上説明したように、本実施形態によると、把持部１０及びブラシ部３０に連通する空気通路２４の吹出口３３がブラシ毛３１間に開口し、放電電極２１が空気通路２４に臨んで配される。このため、ブラシ毛３１間の吹出口３３から正負両方のイオンを含む気流を送出して頭髪に到達するイオンを増加させることができる。

[0091] また、絞り部２６よりも下流の空気通路２４の周部に放電電極２１が配されるので、イオンの消滅を抑制して頭髪に到達するイオンを増加させることができる。従って、頭髪３８の保湿や除電を十分行うことができ、良好な整髪を行うことができる。

[0092] また、帯電粒子発生装置２０を把持部１０に対して着脱可能に設け、空気通路２４の周面に開口する開口部２７ｂを介して放電電極２１が空気通路２４に臨んで配される。これにより、帯電粒子発生装置２０を取り外して放電電極２１を容易に清掃できるとともに回路基板５０と放電電極２１が一体化された帯電粒子発生装置２０を容易に交換することができる。また、空気通路２４の周部に放電電極２１を配置するため、中央部に配置するよりも簡単

な構造で帯電粒子発生装置２０を着脱可能に構成することができる。

[0093] また、カバー２３が帯電粒子発生装置２０の周面に近接して帯電粒子発生装置２０の前部と後部との間を遮蔽する遮蔽リブ２３ｃを有する。これにより、開口部２７ｂと帯電粒子発生装置２０との隙間から漏出する高温の気流による回路基板５０の昇温を防止し、ヘアケア装置１の信頼性を向上することができる。

[0094] また、絞り部２６の軸心に対して放電電極２１と同じ側に空洞部３６が形成され、絞り部２６の軸心に対して放電電極２１の反対側にブラシ毛３１が配される。これにより、放電電極２１で発生したイオンが円滑に空洞部３６に導かれ、吹出口３３から高濃度のイオンを送出することができる。

[0095] また、単線ブラシ毛３１ａがブラシ部３０の周方向の一部を除く所定範囲に設けられ、吹出口３３ａが、単線ブラシ毛列３２間に設けられる。さらに、ブラシ部３０の周方向の両端に高密度ブラシ毛３１ｂのブラシ列を配し、その外側でブラシ部３０の側面に吹出口３３ｂが設けられる。これにより、頭髪３８から単線ブラシ毛３１ａや高密度ブラシ毛３１ｂが離れる際に発生する静電気を効率良く除電することができる。

[0096] 吹出口３３ａは列数が多く吹出口面積の総和も大きくなるので、吹出口３３ａの各々の開口面積を吹出口３３ｂの開口面積よりも小さくすることで、両者のバランスを変更することができる。吹出口３３ｂからの吹き出し気流の量を増加させることで、頭髪３８の癖取りに寄与する効果が大きくできる。

[0097] また、吹出口３３ａ、もしくは吹出口３３ｂの開口面積を変更する代わりに吹出口の数を変更することで両者のバランスを変更することも可能である。

[0098] また、把持部１０の縮径部１１の外周面を絞り部２６に沿って形成したので、縮径部１１の外径を容易に縮径し、使用者が持ちやすくすることができる。即ち、縮径部１１は外周面を円錐面に形成され、吸込口１５側に対して操作部１２に向かって把持部１０の外径を縮径する。このため、使用者は操

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作部１２に隣接する外径の小さい縮径部１１を把持することができる。

[0099] さらに縮径部１１の下流側に帯電粒子発生装置２０を配し、帯電粒子発生装置２０の格納により体積が大きくなった箇所に設けた操作部１２に操作スイッチ１８、１９が設けられる。これにより、ヘアケア装置１の移動操作及び整髪動作中の操作スイッチ１８、１９の切替え操作を容易に行うことができる。

[0100] また、本実施の形態に係るヘアケア方法を用いて、毛髪群に引張力を作用させながら正負両方のイオンを含む気流を引張力が作用する毛髪群、および、単線ブラシ毛３１ａまたは高密度ブラシ毛３１ｂに吹き付けて整髪することにより、毛髪の損傷を抑制でき、髪質を向上させることができる。

[0101] ＜第２実施形態＞

次に、図９は本発明の第２実施形態のヘアケア装置の斜視図である。図１０は、本実施形態のヘアケア装置のブラシ部の内部構造を示す軸に垂直な方向の断面図であり、図９中のＢ－Ｂ断面を矢印の方向から見たブラシ部３０の断面図である。説明の便宜上、前述の図１～図８に示す第１実施形態と同様の部分には同一の符号を付している。本実施形態はブラシ毛３１がブラシ部３０の周方向の全周に設けられる。その他の部分は第１実施形態と同様である。

[0102] 本実施形態では、ブラシ部３０は複数のブラシ毛３１を軸方向に並設した単線ブラシ毛列３２が周方向の全周にわたって均等な間隔で２４列に並設される。第１実施形態と同様に、ブラシ毛３１は、合成樹脂の単線からなる単線ブラシ毛３１ａと、短い獣毛を束にした高密度ブラシ毛３１ｂとを含む。

[0103] 高密度ブラシ毛３１ｂは、ブラシ部３０の周を３等分する位置に列をなして配置される。すなわち、高密度ブラシ毛列がブラシ部３０の周を３等分する位置に設けられている。互いに周方向に間隔をあけて配置される高密度ブラシ毛列の間には、単線ブラシ毛３１ａを列設させた単線ブラシ毛列３２が複数並設して設けられている。

[0104] 隣接する単線ブラシ毛列３２の間および隣接する高密度ブラシ毛列と単線

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ブラシ毛列３２との間には、多数の小孔から成る吹出口３３が設けられる。本実施形態では、単線ブラシ毛列３２の間に設けられた吹出口を吹出口３３ａと呼び、ブラシ部３０の周方向における高密度ブラシ毛列の両側に設けられた吹出口を吹出口３３ｂと呼ぶ。

[0105] 本実施形態では、第１実施形態と異なり、ブラシ部３０の内部に設けられる空洞部３６は連結口１６ａと同心円状に、かつ連結口１６ａよりも小径に形成される。連結口１６ａよりも空洞部３６の直径が小さいことにより径方向に隙間が生じ、この隙間が吹出口３４を構成する。これにより、イオンを含む気流がブラシ毛３１に向かって吹出口３４からブラシ列間に送出される。

[0106] 空洞部３６に侵入した正負両方のイオンを含む気流は、ブラシ部３０の周上に設けられた吹出口３３から径方向に噴出される。これにより頭髪３８の整髪に伴って、正負のイオンが頭髪３８に付着し潤いを与えるとともにブラシ毛３１と頭髪３８との摩擦により発生する静電気を除去することができる。吹出口３３および３４から正負のイオンを含む気流を送出することで、多くのイオンを頭髪３８に到達させることができる。

[0107] 空洞部３６の内部には、第１実施形態と同様に整流リブ３７が設けられるが、第１実施形態ではほぼ半円の形状であった整流リブは、構造的に不可欠な分割をした同心円状に形成される。連結口１６ａから見て手前から第１リブ３７ａ、第２リブ３７ｂ、第３リブ３７ｃの順に配置され、第１リブ３７ａ、第２リブ３７ｂ、第３リブ３７ｃの順にリブの突き出し長さが長く形成されることは第１実施形態と同じである。

[0108] 第１実施形態と第２実施形態では単線ブラシ毛列３２、高密度ブラシ毛列の数と配置部分の面積が異なるが、同一の思想で配置されており、第１実施形態同様の効果を得ることができる。また、ブラシ部３０の周上３か所に配した高密度ブラシ毛３１ｂの少なくともいずれかまたは単線ブラシ毛３１ａを用いて頭髪３８を捕捉して引張力を掛けながら吹出口３３ｂから正負両方のイオンを含む温風を引張力が作用する毛髪群および高密度ブラシ毛列に吹

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き付けることにより、毛髪の損傷を抑制でき、髪質を向上させることができる。

[0109] また、単線ブラシ毛列３２間および高密ブラシ毛列と単線ブラシ毛列３２との間に設けた吹出口３３からイオンが噴出されるので、ブラシ部３０の周方向のどの位置でブラッシングを行っても頭髪からブラシ毛３１が離れる際に発生する静電気を効率良く除電することができる。

[0110] 図１１は、本実施形態のヘアケア装置を用いたヘアケア方法の一例を示す図である。図１１を参照して、本実施の形態に係るヘアケア方法について説明する。図１１では、高密度ブラシ毛３１ｂを用いた整髪方法の一例を示している。

[0111] 本実施の形態に係るヘアケア方法にあっては、使用者は、ブラシ部３０の周面上の３か所に配置した高密度ブラシ毛３１ｂのうち少なくともいずれかを頭髪３８に挿入して、この状態でブラシ部３０を頭髪３８の根本側から毛先側へブラシ部３０を移動させている。

[0112] 具体的には、図中のブラシ部３０の最も下部にある高密度ブラシ毛３１ｂにて頭髪３８を捕捉して当該頭髪３８に引張力を加えながら、高密度ブラシ毛３１ｂと単線ブラシ毛３１ａの両方で頭髪３８を梳いている。

[0113] 頭髪３８を補足している高密度ブラシ毛３１ｂの両側にある吹出口３３ｂから正負両方のイオンを含む温風が、高密度ブラシ毛３１ｂの周辺領域である領域３８ａに吹き付けられる。これにより、高密度ブラシ毛３１ｂと毛髪群との摩擦により発生して、毛髪群に帯電した正極性の静電気と、高密度ブラシ毛３１ｂに帯電した負極性の静電気とを除去することができる。この結果、ブラッシングの際に発生する静電気を大幅に抑制することができ、静電気による毛髪の損傷を抑制することができる。

[0114] また、引張力を作用させた状態で正負両方のイオンを含む温風を頭髪３８に吹き付けることにより、頭髪３８に潤いを与えつつ、くせ毛・うねり等の髪質を効果的に改善することができる。これらの結果、髪のつやも効果的に改善させることができる。

[0115] 同時に、図中左上に示すように、毛髪群を補足する高密度ブラシ毛３１ｂから見てブラシ部３０の進行方向（毛髪を梳かす方向）の後方に位置し、他の高密度ブラシ毛３１ｂの近傍に位置する領域３８ｂにも、他の高密度ブラシ毛３１ｂの両側にある吹出口３３ｂから正負両方のイオンを含む温風が吹き付けられる。

[0116] 他の高密度ブラシ毛３１ｂの近傍に位置する（領域３８ｂに位置する）毛髪群にも、図中のブラシ部３０の最も下部にある高密度ブラシ毛３１ｂによって引張力が作用している。このため、他の高密度ブラシ毛３１ｂの近傍に位置する毛髪群においても、頭髪３８に潤いを与えつつ、くせ毛・うねり等の髪質を改善することができる。

[0117] 使用者が、図中で反時計回りに持った把持部１０を少し回転させると、図中左上にある他の高密度ブラシ毛３１ｂも頭髪３８を捕捉出来るようになるため、さらに強く引張力を掛けることができる。この場合においても、上述同様の理由により、ブラッシングの際に発生する静電気を大幅に抑制することができ、静電気による毛髪の損傷を抑制することができる。また、頭髪３８に潤いを与えつつ、くせ毛・うねり等の髪質を効果的に改善することができる。

[0118] このように、複数個所において、毛髪の損傷を抑制しつつ髪質を改善することもできるため、整髪時間を短縮することもできる。また、単線ブラシ毛３１ａを用いつつ、高密度ブラシ毛３１ｂも用いて頭髪３８を梳くことになるため、この点においてもくせ毛・うねり等の髪質をより効果的に改善することができるとともに、整髪時間を短縮することができる。

[0119] ＜第３実施形態＞

第２実施形態において、高密度ブラシ毛３１ｂはブラシ部３０の全周を３等分する位置に列状に配置したが、全周を２等分する位置に配置してもよく、４等分～６等分する位置に配置してもよい。

[0120] この場合には、より多くの高密度ブラシ毛列で毛髪を補足することにより、第１実施形態と比較して、くせ毛・うねり等をより改善することができる

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。また、整髪時間も短縮することもできる。

[0121] ただし、高密度ブラシ毛列の列数が多くなると整髪時に摩擦が大きくなり使用者の腕の負担が増すばかりでなく頭髪を痛めることも考えられる。高密度ブラシ毛３１ｂの毛の材質や植設密度によって本数や列数など適切に配置するのが好ましい。

[0122] 本発明のようなヘアケア装置の主たる使用者は女性であると考えるため、腕力や手首の力が弱く腕への負担が大きいことや、長い頭髪による首への負担も考慮すべきであり、負担が少なく扱いやすいことが重要である。

[0123] ＜第４実施形態＞

また、第１実施形態から第３実施形態では高密度ブラシ毛３１ｂは、それぞれの位置に１列で配置したが、複数列であってもよい。この場合にも、あまり過剰に設置をすると整髪時に摩擦が大きくなり使用者の腕力、体力への負担が増すばかりでなく頭髪を痛めることも考えられるので、高密度ブラシ毛３１ｂの毛の材質や植設密度によって適切な配置が求められるべきである。なお、この場合には、第１実施形態と比較して、くせ毛・うねり等をより改善することができる。また、整髪時間も短縮することもできる。

[0124] ＜第５実施形態＞

以上の実施形態において、ヘアケア装置１がヒータ４を省いて冷風を送出するヘアドライヤであってもよい。温風を使用しない場合では、イオンによる潤い付与によって癖取りが緩やかに行われる。この場合においても、正負両方のイオンにより、高密度ブラシ毛３１ｂと毛髪群の摩擦により発生する静電気を除去することができる。このため、第５実施の形態においても、第１実施形態とほぼ同等の効果が得られる。

[0125] ＜第６実施形態＞

また、本発明で使用する帯電粒子発生装置２０は空気イオンを発生しているが、これに限らない。例えば、帯電粒子発生装置２０を静電霧化装置によって構成してもよい。静電霧化装置では、放電電極２１をペルチェ素子により冷却することで放電電極２１の表面に結露水が生じる。放電電極２１に負

の高電圧を印加すると、結露水から負イオンを含む帯電微粒子水が生成される。また、放電電極２１に正の高電圧を印加すると、結露水から正イオンを含む帯電微粒子水が生成される。これにより、帯電微粒子水から成る正負の帯電粒子を送出して頭髪の保湿及び除電を行うことができる。

[0126] このため、本実施の形態に係るヘアケア方法にあっても、実施の形態１に係るヘアケア方法とほぼ同様の効果を得ることができる。

[0127] また、放電電極２１を空気通路２４の周部に配して上流側に絞り部２６を設けることにより、帯電微粒子水に気流が直接接触して帯電微粒子水が蒸発することによる帯電微粒子水の消滅を防止することができる。

## 実施例

[0128] （検証実験１）

図１２は、本発明の効果を検証するために行なった検証実験１の条件および結果を示す図である。図１３は、図１２に示す検証実験１の結果を数値で示す図である。図１２および図１３を参照して、本発明の効果を検証するために行なった検証実験１について説明する。

[0129] 図１２および図１３に示すように、検証実験１においては、実施例１、２、比較例１から３におけるヘアケア方法を使用して整髪した際の髪のつやを評価した。実施例１におけるヘアケア方法としては、高密度ブラシ毛３１ｂで毛髪群を梳きながら、正負両方のイオンを含む温風を毛髪群に吹き付けた。実施例２におけるヘアケア方法としては、単線ブラシ毛３１ａで毛髪群を梳きながら、正負両方のイオンを含む温風を毛髪群に吹き付けた。

[0130] 比較例１におけるヘアケア方法としては、高密度ブラシ毛３１ｂで毛髪を梳きながら、正負両方のイオンを含まない温風を毛髪群吹き付けた。比較例２におけるヘアケア方法としては、単線ブラシ毛３１ａで毛髪群を梳きながら、正負両方のイオンを含まない温風を毛髪群に吹き付けた。比較例３におけるヘアケア方法としては、単線ブラシ毛３１ａで毛髪群を梳きながら、負イオンのみを含む温風を毛髪群に吹き付けた。

[0131] 髪のつやを評価するに際し、頭頂部から後頭部にかけてヘアケア装置によ

るブロー前後の状態を暗室内にてカメラを用いて撮影した。カメラは、ＥＯＳ　Ｋｉｓｓ　Ｘ５（キャノン社製）を使用した。ブローは、頭頂部および後頭部を６ブロックに区画して各ブロックあたり３回行なった。

[0132] 図１２に示すように、実施例１に示す画像においては、比較例１から３と比較して、光を反射して輝いている環状の明るい部分（いわゆる天使の輪）がまっすぐにそろっている。これにより、実施例１におけるヘアケア方法を実施した場合には、最も美しいツヤが得られることが確認できる。

[0133] また、画像処理ソフトウェア（製品名：「Ｐｈｏｔｏｓｈｏｐ（登録商標）」、Ａｄｏｂｅ　Ｓｙｓｔｅｍ　Ｉｎｃ）を用いて撮影した画像からツヤ値を算出した。

[0134] ツヤ値は、最も輝度が高い部分（図１２中において天使の輪のように見える環状の明るい部分）の平均輝度／暗い部分の平均輝度にて算出した。ここで、暗い部分とは、図１２中において天使の輪のように見える環状の明るい部分の周囲に位置し、当該明るい部分から縦方向に所定の距離下がった部分である。

[0135] ブロー前の初期状態におけるツヤ値（初期値）とブロー後の状態におけるツヤ値とを比較し、実施例１、２、比較例１～３のそれぞれにおいて初期値を１００とした場合における相対値を算出した。図１３においては、実施例１、２、比較例１～３と相対値との関係を図示している。

[0136] 図１３に示すように、実施例１では、初期値を１００とした場合におけるブロー後の相対値は１４３となっており、ツヤ値が４３％増加している。一方、比較例１，実施例２においては、ブロー後の相対値は１２２，１１３となっており、実施例１には及ばないもののツヤ値が向上していることが確認できる。なお、比較例２，３においては、ブロー後の相対値は両方とも１０５となっており、ツヤ値にほとんど変化が見られなかった。

[0137] 実施例１、実施例２の結果と、比較例２，３の結果とを比較して、毛髪群に正負両方のイオンを吹き付けることにより、ツヤが向上することが確認できる。また、実施例１の結果と実施例２との結果、および、比較例１の結果

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と比較例２の結果を比較して、高密度ブラシ毛３１ｂを用いて毛髪群に引張力を作用させながら毛髪群を梳くことにより、ツヤがより向上することが確認できる。

[0138] さらに、実施例１の結果と比較例２の結果とを比較して、高密度ブラシ毛３１ｂを用いて毛髪群に引張力を作用させながら正負両方のイオンを吹き付けることにより、大幅にツヤ値を向上させることができることが確認できる。

[0139] （検証実験２）

図１４は、本発明の効果を検証するために行なった検証実験２の条件および結果を示す図である。図１４を参照して、本発明の効果を検証するために行なった検証実験２について説明する。

[0140] 図１４に示すように、検証実験２においては、実施例１、比較例１、比較例３におけるヘアケア方法を使用して整髪した際の毛髪群とブラシ部３０との電位差を測定した。実施例１、比較例１，３におけるヘアケア方法は、検証実験１におけるヘアケア方法と同様の方法である。

[0141] 電位差の測定においては、ブロー後の毛髪群およびブラシの帯電量を表面電位計ＦＭＸ－００３（シムコ製）で測定し、両者の電位差を比較した。なお、帯電量は、後述する試験用毛髪群ごとに３回測定し、平均値を算出した。高密度ブラシ毛３１ｂと毛髪群との摩擦により毛髪群側が正極性に帯電し、ブラシ側が負極性に帯電する。

[0142] ブローする毛髪群の準備に際して、１５ｇの毛髪群を試験用毛髪群とした。これら試験用毛髪群を所定の個数準備し、各試験用毛髪群での電位差の平均値を算出した。

[0143] 実施例１、比較例１においては、ブローは、高密度ブラシ毛３１ｂにて毛髪群を補足して、ブラシ部３０を毛髪群の一端側から他端側に移動させることにより行なった。また、ブローを５回行なった後に、帯電量を測定した。比較例３においては、ブローは、単線ブラシ毛３１ａを毛髪群に挿入してブラシ部３０を毛髪群の一端側から他端側に移動させることにより行なった。

また、ブローを５回行なった後に、帯電量を測定した。

[0144] 実施例１における電位差は、比較例１および比較例３における電位差よりも十分に小さくなっている。比較例１における電位差は、比較例３における電位差とほぼ同等の値であった。

[0145] これらの結果から、実施例１では、正負両方のイオンを含む温風を引張力が作用する毛髪群に吹き付けることにより、毛髪群側に帯電する正極性の静電気とブラシ部側に帯電する負極性の静電気の両方を除去することができ、この結果、上記電位差を低くすることができたと言える。

[0146] 一方、比較例１の結果と比較例３の結果とを比較して、以下のことが考察される。負イオンを毛髪群に吹き付けることにより、毛髪群側に帯電した正極性の静電気を除去することができるものの、ブラシ部３０側に帯電した負極性の静電気を除去することができない。このため、負極性に帯電するブラシ部３０によって毛髪群を梳くこととなり、静電気の発生を抑制することができず、ブラシ部３０側と毛髪群側との電位差を改善できなかったと考察される。

[0147] （検証実験３）

図１５は、本発明の効果を検証するために行なった検証実験３の条件および結果を示す図である。図１５を参照して、本発明の効果を検証するために行なった検証実験３について説明する。

[0148] 図１５に示すように、検証実験３においては、実施例１、比較例１および比較例３におけるヘアケア方法を使用して整髪した後の毛髪群における枝毛および切れ毛の本数を計測した。実施例１、比較例１，３におけるヘアケア方法は、検証実験２における各ヘアケア方法と同様である。

[0149] ブローする毛髪群の準備に際して、黒色の毛髪を５ｇ（１５００本）に分けて束ねた後に４０ｃｍの長さに切り揃えて毛束を作成した。この毛束を調髪用ハサミによって３０ｃｍに切り揃えることにより、枝毛および切れ毛が除去して試験用毛髪群を得た。

[0150] 実施例１および比較例１においては、ブローは、高密度ブラシ毛３１ｂに

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て毛髪群を補足して、ブラシ部３０を毛髪群の一端側から他端側に移動させることにより行なった。これを３００回連続で繰り返した後の毛髪群において枝毛および切れ毛の本数を計測した。比較例３においては、単線ブラシ毛３１ａを用いて毛髪群を３００回梳いた。

[0151] 実施例１では、比較例１，３よりも枝毛および切れ毛の本数が少なくなった。これにより、実施例１におけるヘアケア方法を用いて、毛髪群に引張力を作用させながら正負両方のイオンを含む温風を引張力が作用する毛髪群に吹き付けて整髪することにより、毛髪の損傷を抑制できることが確認された。

[0152] また、比較例１の結果から、正負両方のイオンと含む温風を吹き付けない場合には、毛髪の損傷を十分に抑制することができないことが確認された。さらに、比較例３の結果から、負イオンのみを毛髪群に吹き付けても毛髪の損傷を十分に抑制することができないことが確認された。

[0153] 負イオンを毛髪群に吹き付けることにより、毛髪群側に帯電した正極性の静電気を除去することができる。しかしながら、ブラシ部３０側に帯電した負極性の静電気を除去することができないため、ブラシ部３０側と毛髪群側との電位差を改善できない。この結果、高密度ブラシ毛３１ｂと毛髪群との摩擦による静電気を抑制することができず、毛髪が損傷しやくなったと考察される。

[0154] （検証実験４）

図１６は、本発明の効果を検証するために行なった検証実験４の条件および結果を示す図である。図１６を参照して、本発明の効果を検証するために行なった検証実験４について説明する。

[0155] 図１６に示すように、検証実験４においては、実施例１、比較例１および比較例３におけるヘアケア方法を使用して整髪した後の毛髪群の表面状態を観察した。実施例１、比較例１，３におけるヘアケア方法は、検証実験３における各ヘアケア方法と同様である。

[0156] また試験用の毛髪群として検証実験３と同様のものを用い、同様の条件に

て３００回連続でブローした。３００回連続で繰り返しブローした後の毛髪群に含まれる毛髪を超深度マルチアングルレンズマイクロスコープＶＨＸ－５００（キーエンス社製）にて観察した。なお、観察の際には毛髪は中央部である略１５ｃｍの位置で片結びし、結び目近傍を観察した。

[0157] 実施例１では、キューティクルの剥がれや浮きがほとんど認められなかった。一方、比較例１，３では、キューティクルの剥がれや浮きが認められ、毛髪が損傷していた。

[0158] このような結果からも、実施例１におけるヘアケア方法を用いて、毛髪群に引張力を作用させながら正負両方のイオンを含む温風を引張力が作用する毛髪群および高密度ブラシ毛３１ｂに吹き付けて整髪することにより、毛髪の損傷を抑制できることが確認されたと言える。

[0159] （検証実験５）

図１７は、本発明の効果を検証するために行なった検証実験５の条件および結果を示す図である。図１７を参照して、本発明の効果を検証するために行なった検証実験５について説明する。

[0160] 図１７に示すように、検証実験５においては、実施例１、２、比較例１から３におけるヘアケア方法を使用して整髪した場合における整髪前後の毛髪の長さの変化率を評価した。実施例１、２、比較例１から３におけるヘアケア方法は、検証実験１におけるヘアケア方法と同様の方法である。

[0161] 毛髪の長さの変化率の評価においては、くせ毛・うねりを有する毛髪群を準備し、ブロー前の毛髪群の長さと、ブロー後の毛髪群の長さとを測定した。

[0162] くせ毛・うねりを有する毛髪群を準備するに際して、まず、総重量１５ｇの毛髪群を作成した。次に、この毛髪群を５分以上水に浸漬し、φ２４ｍｍの試験管に巻きつけた。この状態で、当該毛髪群を２４時間以上自然乾燥し静置した。試験管から毛髪群を外すことにより、くせ毛・うねりを有する毛髪群を準備した。

[0163] 上記変化率の測定においては、まず、試験管から外した状態の毛髪群の長

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さをブロー前の毛髪群の長さとして測定した。この場合におけるブロー前の長さは、略２０ｃｍ～２３ｃｍとなった。続いて、高密度ブラシ毛３１ｂを使用する場合には高密度ブラシ毛３１ｂにて毛髪群を捕捉し、単線ブラシ毛３１ａを使用する場合には単線ブラシ毛３１ａを毛髪群に挿入し、ブラシ部３０を毛髪群の一端側から他端側に移動させることによりブローを行なった。なお、ブローは５回行なった。

[0164] ５回ブローした後（ブロー処理後）の毛髪群の長さを測定し、ブロー前の毛髪群の長さと比較した。この際、ブロー処理後の毛髪群の長さとブロー処理前の毛髪群の長さとの差分をブロー処理前の毛髪群の長さで除算した値を変化率とした。

[0165] 実施例１においては、変化率が最も大きく、くせ毛・うねりを最も改善することができた。実施例２においては、実施例１に次いで、変化率が大きくなっており、くせ毛・うねりを改善することができた。

[0166] 実施例２においては、比較例２よりも変化率が大きくなっている。実施例２の結果と比較例２の結果とを比較して、正負両方のイオンを含む温風を毛髪群に吹き付けることにより、くせ毛・うねりを改善することが確認できる。

[0167] また、比較例１は、比較例２よりも若干変化率が大きくなっている。比較例１の結果と比較例２の結果を比較して、高密度ブラシ毛３１ｂにて毛髪群を補足して毛髪群に引張力を作用させることにより、くせ毛・うねりを改善することが確認できる。

[0168] このように、正負両方のイオンを含む温風を毛髪群に吹き付けること、および毛髪群に引張力を作用させることのそれぞれが、くせ毛・うねりの改善に貢献する。このため、これらの両方の動作を含む実施例１，２におけるヘアケア方法を用いた場合には、上述のように変化率が大きくなり、くせ毛・うねりを改善することができた。さらに、高密度ブラシ毛３１ｂを用いて、単線ブラシ毛３１ａよりも大きな引張力を頭髪に毛髪群に作用させることにより、よりくせ毛・うねりを改善することができた。

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[0169] 以上のように、検証実験１～５の結果から、本実施の形態に係るヘアケア方法を使用することにより、毛髪の損傷を抑制でき、髪質を向上させることができることが確認されたと言える。

[0170] 以上、本発明の実施の形態および実施例について説明したが、今回開示された実施の形態および実施例はすべての点で例示であって制限的なものではない。本発明の範囲は請求の範囲によって示され、請求の範囲と均等の意味および範囲内でのすべての変更が含まれる。

## 符号の説明

[0171] １　ヘアケア装置、３　送風機、３ａ　送風機モータ、４　ヒータ、５　駆動回路、１０　把持部、１１　縮径部、１２　操作部、１５　吸込口、１５ｇ　総重量、１６　連結部、１６ａ　連結口、１７　電源コード、１８，１９　操作スイッチ、２０　帯電粒子発生装置、２１　放電電極、２２　カバー部、２２ａ　貫通孔、２３　カバー、２３ａ，２３ｂ　係止爪、２３ｃ　遮蔽リブ、２３ｄ　押圧リブ、２４　空気通路、２５　空洞部、２６　絞り部、２６ａ　流入口、２７　イオン混合部、２７ａ　取付面、２７ｂ　開口部、３０　ブラシ部、３１　ブラシ毛、３１ａ　単線ブラシ毛、３１ｂ　高密度ブラシ毛、３２　単線ブラシ毛列、３３，３３ａ，３３ｂ，３４　吹出口、３５　ベース材、３６　空洞部、３７　整流リブ、３７ａ　第１リブ、３７ｂ　第２リブ、３７ｃ　第３リブ、３８　頭髪、５０　回路基板、５１　端子。

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# 請求の範囲

[請求項1] ヘアケア装置を用いたヘアケア方法であって、

前記ヘアケア装置として、

吸込口が設けられた柱状の把持部と、

前記把持部の軸方向に連結し、周面に多数のブラシ毛が立設されるとともに前記ブラシ毛の周囲に吹出口が設けられたブラシ部と、

前記把持部及び前記ブラシ部の内部に連通して設けられるとともに前記吸込口から前記吹出口に気流を導く空気通路と、

前記空気通路内に配置される送風機と、

前記空気通路内に配置され、前記気流を加熱可能な加熱装置と、

前記空気通路内に配置され、正極性および負極性の両方の帯電粒子を発生させる帯電粒子発生装置と、を備え、

多数の前記ブラシ毛は、単線から成る単線ブラシ毛を列設させた単線ブラシ毛列と、前記単線ブラシ毛列の延在方向と平行な方向に毛束からなる高密度ブラシ毛を列設させた高密度ブラシ毛列とを構成し、

前記単線ブラシ毛列は、前記周面の周方向に互いに離間して配置された前記高密度ブラシ毛列の間に配置され、

前記単線ブラシ毛列間および前記周方向における前記高密度ブラシ毛列の両側に前記吹出口を列状に配置したヘアケア装置を用いて、

前記単線ブラシ毛または前記高密度ブラシ毛で毛髪群を梳かしながら前記吹出口から前記気流を当該毛髪群に向けて送出することにより、毛髪群に引張力を作用させながら前記正極性および前記負極性の両方の前記帯電粒子を含む前記気流を前記引張力が作用する毛髪群および、単線ブラシ毛または前記高密度ブラシ毛に吹き付けて整髪するヘアケア方法。

[請求項2] １００ｍｍ／ｓｅｃの速さで前記ヘアケア装置を前記毛髪群の根本側から毛先側に移動させた場合に前記毛髪群に作用する前記引張力が、０．５Ｎより大きく１０．０Ｎより小さい、請求項１に記載のヘア

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ケア方法。

[請求項3] 前記気流の温度が、前記ブラシ毛の先端近傍において３０℃以上２００℃以下である、請求項１または２に記載のヘアケア方法。

[請求項4] 前記帯電粒子発生装置から前記吹出口に至るまでの前記空気通路内における前記正極性の前記帯電粒子および前記負極性の前記帯電粒子のいずれかの濃度が、５０００個／ｃｍ$^3$より大きく、５０００００個／ｃｍ$^3$より小さい、請求項１から３のいずれか１項に記載のヘアケア方法。

[請求項5] 吸込口を開口して柱状に形成される把持部と、

前記把持部の軸方向に連結して周面に多数のブラシ毛を立設するブラシ部と、

前記ブラシ毛間に開口する吹出口と、

前記把持部及び前記ブラシ部の内部に連通して設けられる空気通路と、

前記空気通路内に配される送風機と、を備え、

前記ブラシ毛により整髪するヘアケア装置において、

前記ブラシ毛は単線からなるブラシ毛と、毛束からなる高密度ブラシ毛とを含み、

前記単線からなるブラシ毛列を囲むように前記高密度ブラシ毛列を設置し、

さらに前記高密度ブラシ毛列の両側に前記吹出口を列状に配置したことを特徴とするヘアケア装置。

[請求項6] 前記ブラシ部内部の空気通路に気流の進行方向と交差する方向に整流リブを設け、前記吹出口に気流を導くことを特徴とする請求項５に記載のヘアケア装置。

[請求項7] 前記整流リブは、気流の進行方向に向かって複数配置され、気流進行方向の上流側よりも下流側のリブの方が突き出し長さを長くして形成されることを特徴とする請求項６に記載のヘアケア装置。

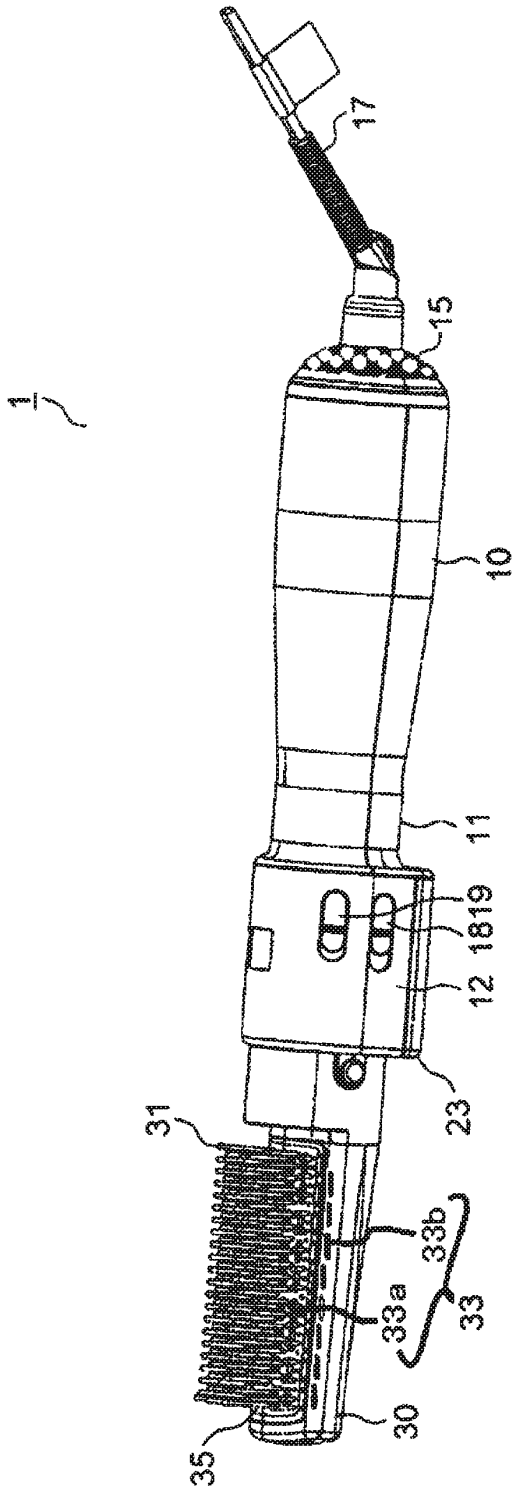
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[請求項8] 前記空気通路内に気流を加熱する加熱装置を備えることを特徴とする請求項５から請求項７に記載のヘアケア装置。

[請求項9] さらに空気通路内に帯電粒子を発生させる帯電粒子装置を備えたことを特徴とする請求項５から請求項８に記載のヘアケア装置。

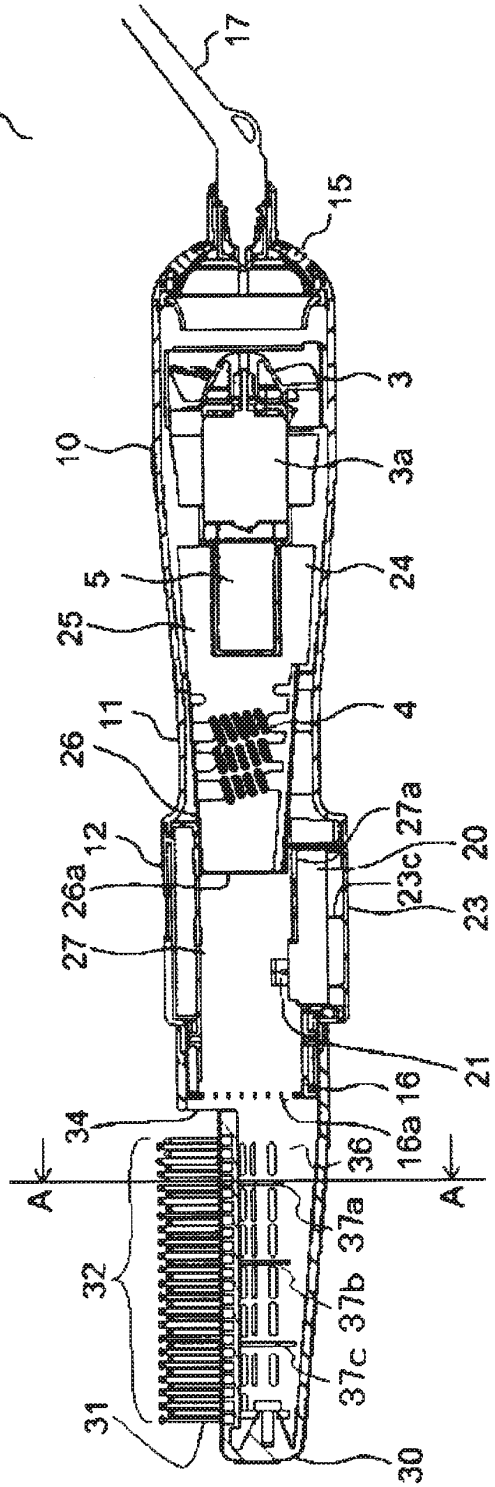
[図1]

図1



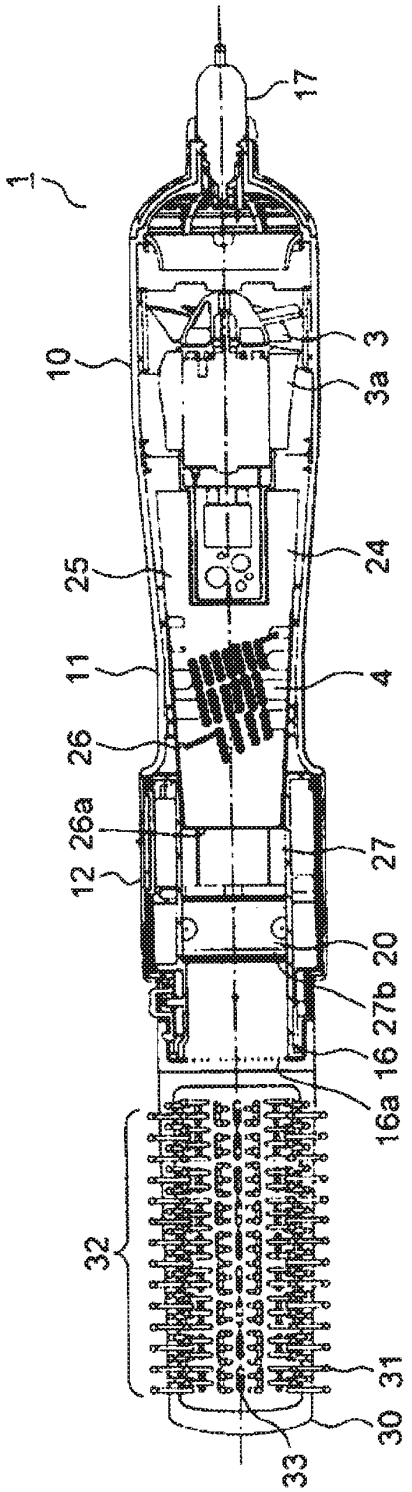
[図2]

図2


17
1
15
3
10
3a
5
24
25
4
11
26
27a
12
20
26a
23c
23
27
21
16
34
16a
36
A
A
37a
32
37b
37c
31
30

[図3]

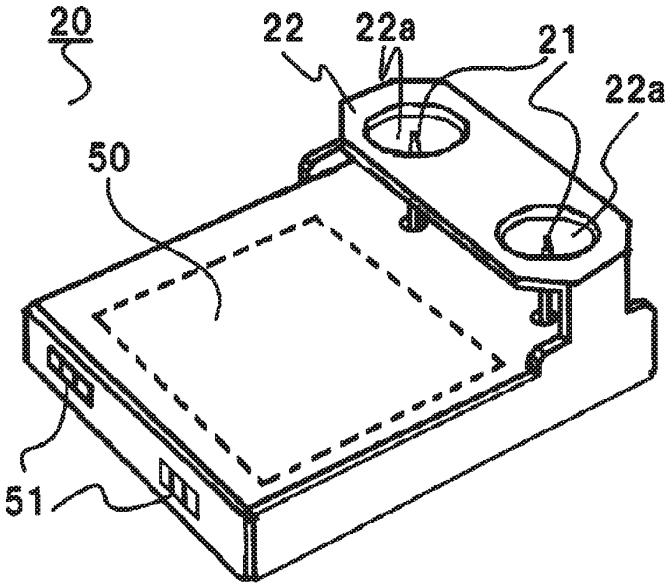
図3




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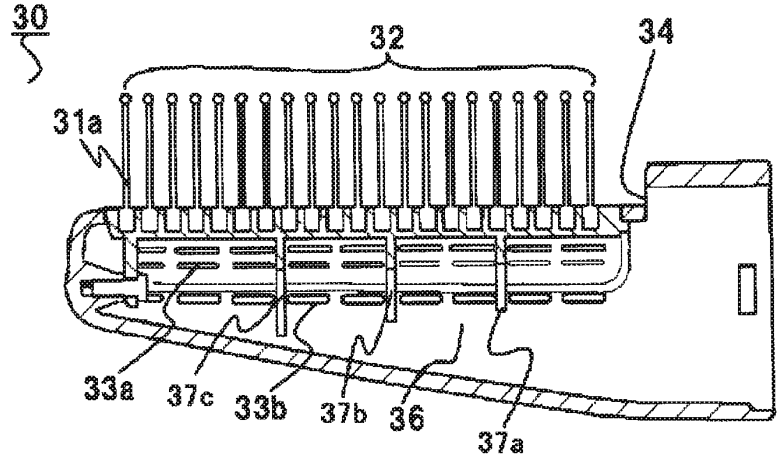
[図4]

図4



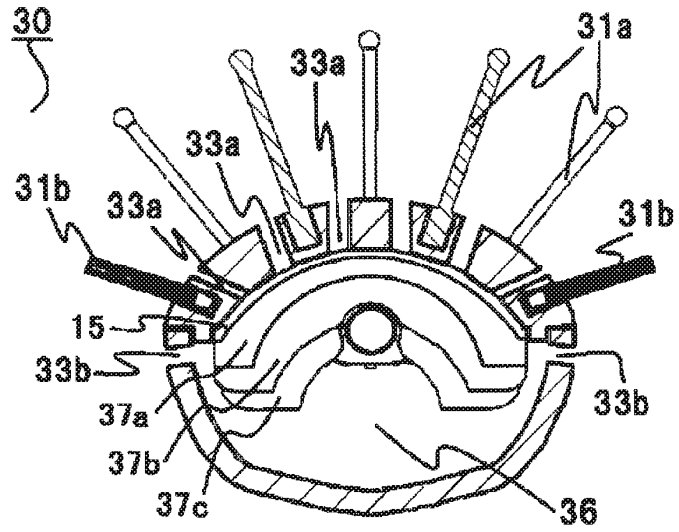

[図5]

図5



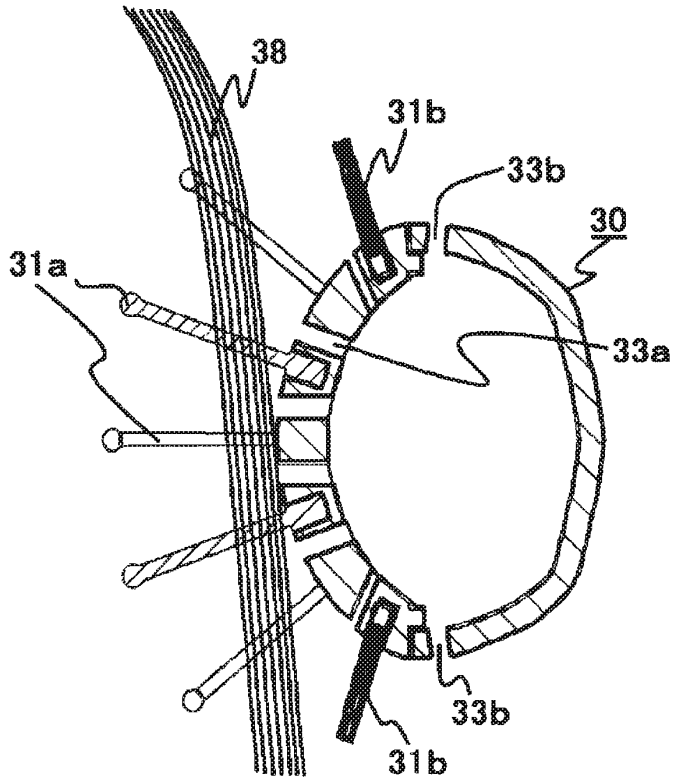
[図6]

図6


30
31a
33a
33a
33a
31b
31b
15
33b
33b
37a
37b
37c
36

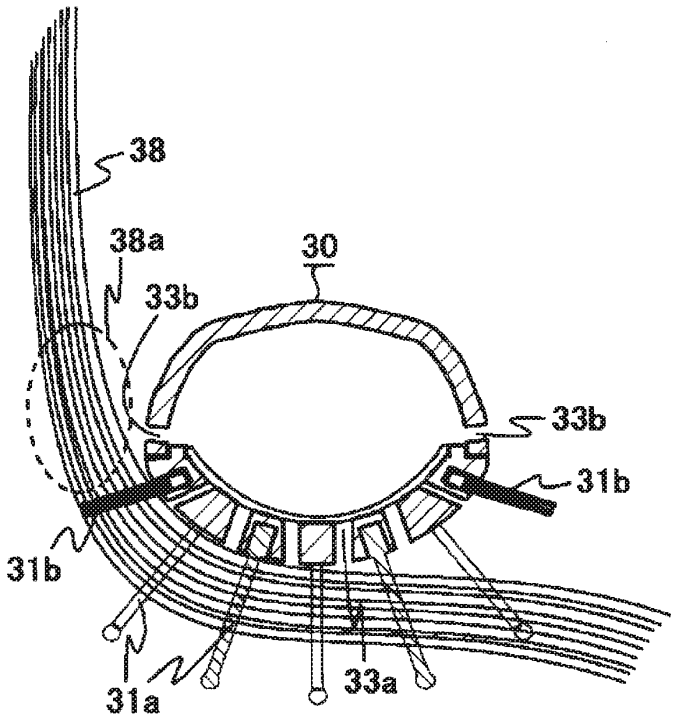
[図7]

図7


38
31b
33b
30
31a
33a
33b
31b

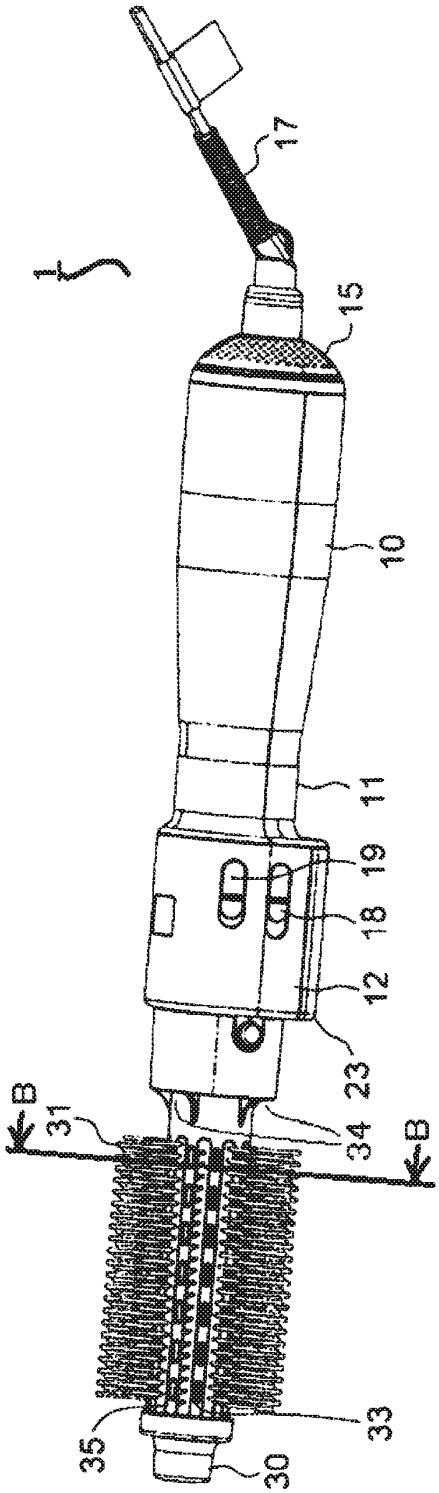
[図8]

図8



[図9]

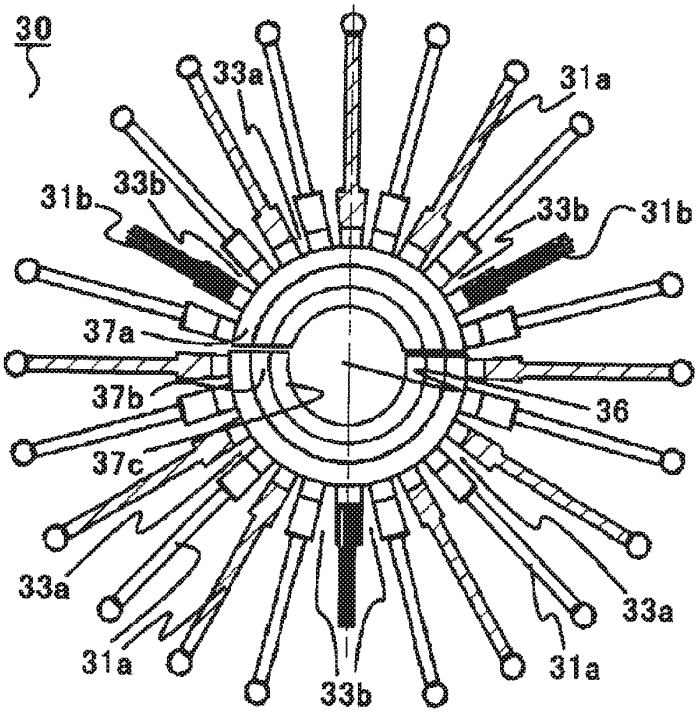
図9




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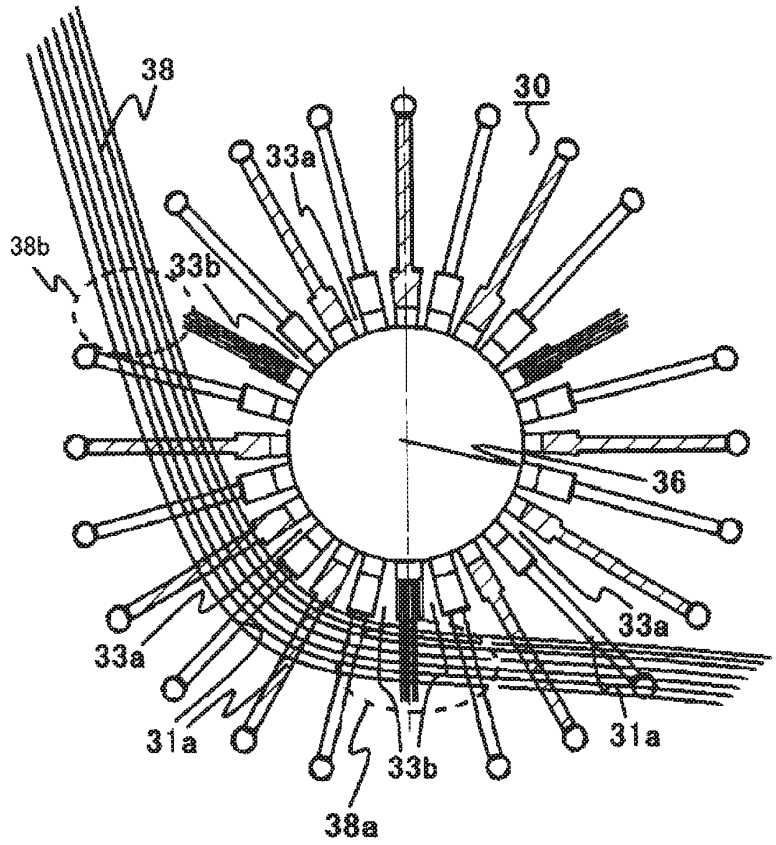
[図10]

図10



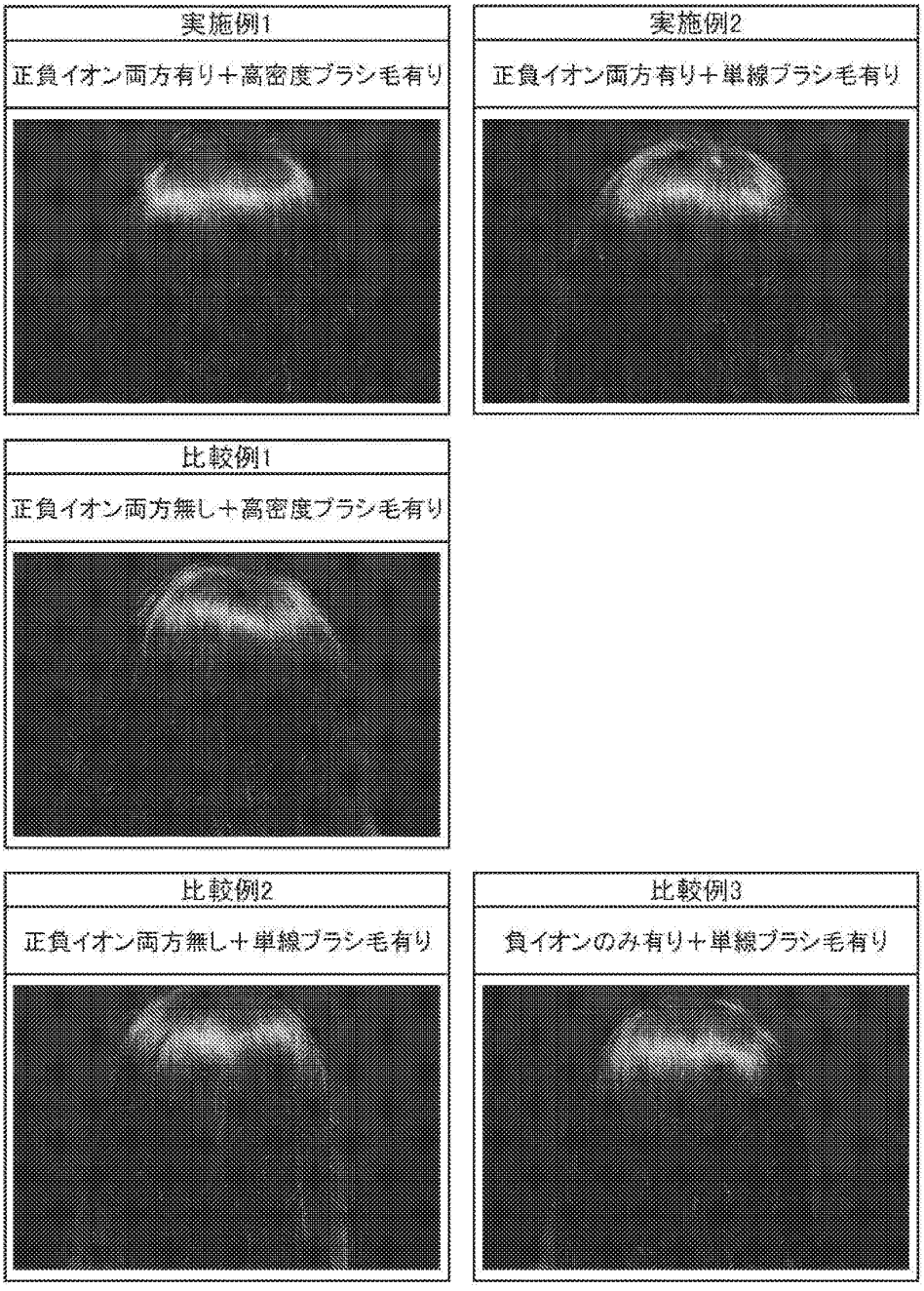
[図11]

図11



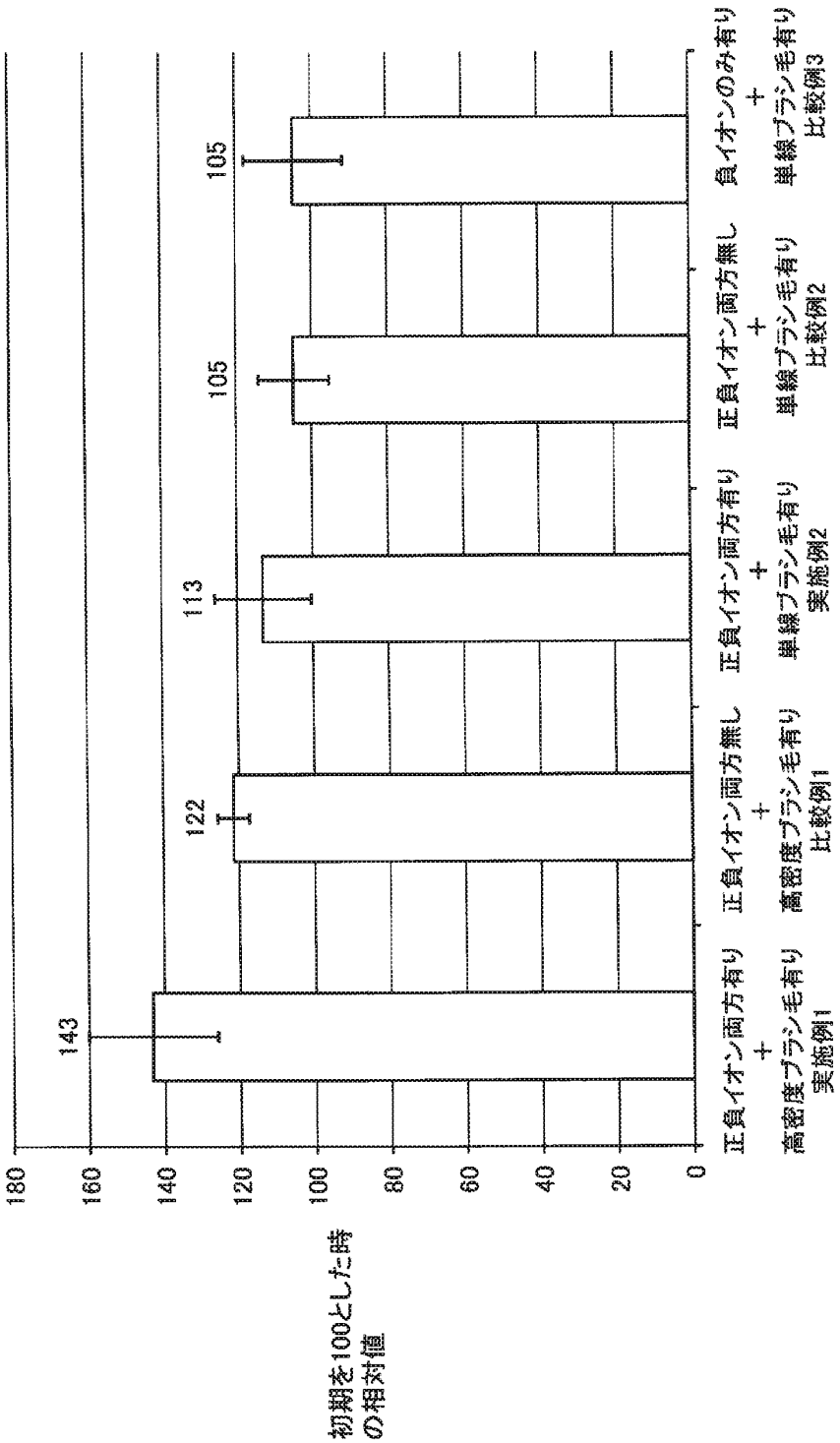
[図12]

図12


実施例1
正負イオン両方有り＋高密度ブラシ毛有り
実施例2
正負イオン両方有り＋単線ブラシ毛有り
比較例1
正負イオン両方無し＋高密度ブラシ毛有り
比較例2
正負イオン両方無し＋単線ブラシ毛有り
比較例3
負イオンのみ有り＋単線ブラシ毛有り

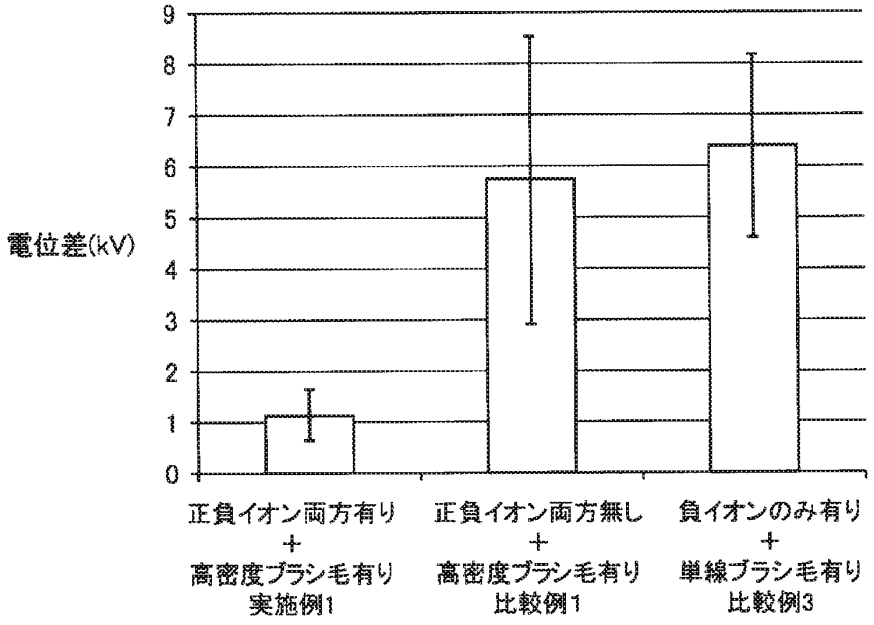
[図13]

図13


初期を100としたときの相対値
180
160
140
120
100
80
60
40
20
0
143
122
113
105
105
正負イオン両方有り
+
高密度ブラシ毛有り
実施例1
正負イオン両方無し
+
高密度ブラシ毛有り
比較例1
正負イオン両方有り
+
単線ブラシ毛有り
実施例2
正負イオン両方無し
+
単線ブラシ毛有り
比較例2
負イオンのみ有り
+
単線ブラシ毛有り
比較例3

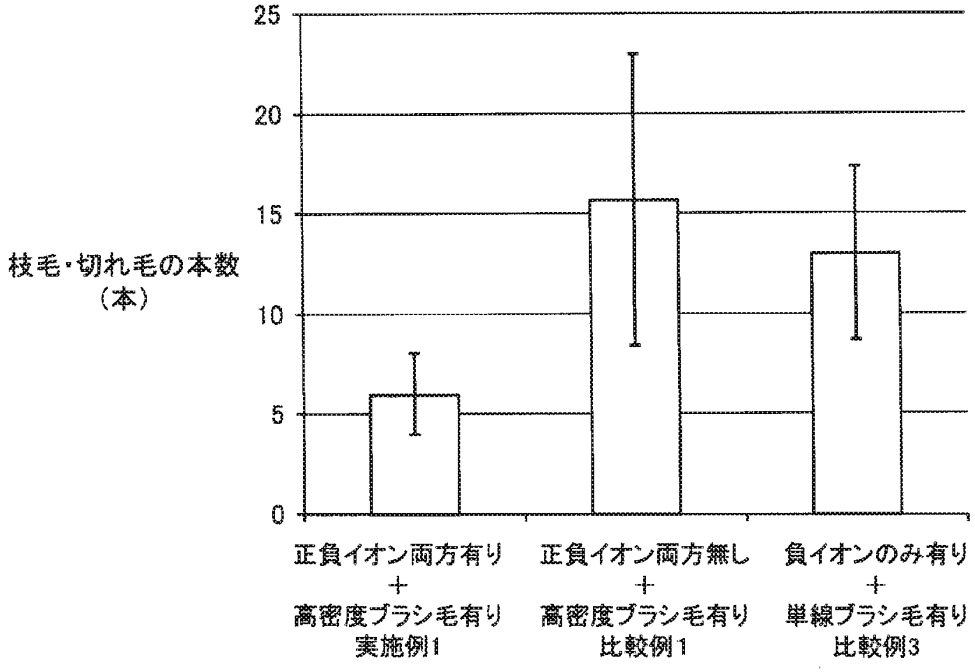
[図14]

図14




[図15]

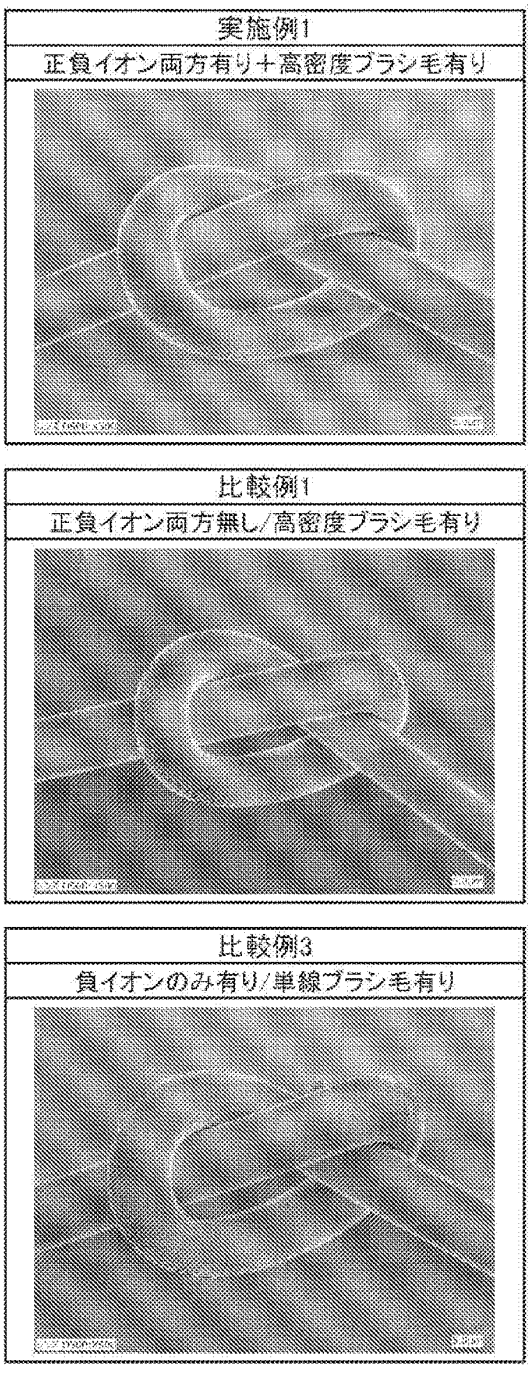
図15




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Page 1698 of 1998

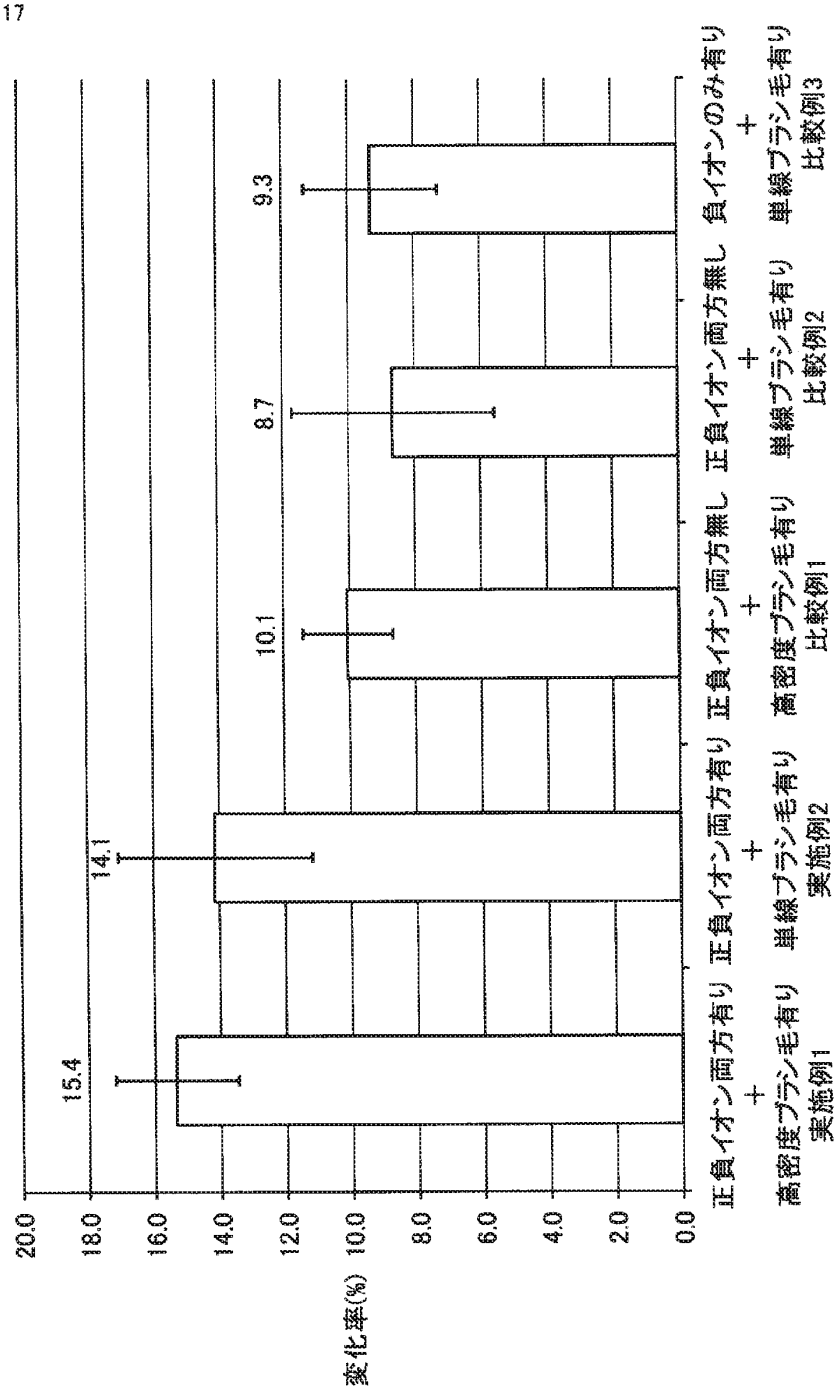
[図16]

図16


実施例1
正負イオン両方有り＋高密度ブラシ毛有り
比較例1
正負イオン両方無し/高密度ブラシ毛有り
比較例3
負イオンのみ有り/単線ブラシ毛有り

[図17]

図17




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Page 1700 of 1998

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2015/063982

A. CLASSIFICATION OF SUBJECT MATTER
*A45D20/12*(2006.01)i, *A45D20/50*(2006.01)i

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)
A45D20/12, A45D20/50

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

| | | | |
|---|---|---|---|
| Jitsuyo Shinan Koho | 1922-1996 | Jitsuyo Shinan Toroku Koho | 1996-2015 |
| Kokai Jitsuyo Shinan Koho | 1971-2015 | Toroku Jitsuyo Shinan Koho | 1994-2015 |

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| Y | JP 62-192108 A (Matsushita Electric Works, Ltd.), 22 August 1987 (22.08.1987), page 1, lower left column, line 18 to page 2, upper left column, line 3; page 2, lower left column, lines 3 to 19; fig. 6 to 9, 12 (Family: none) | 1-9 |
| Y | JP 2007-229316 A (Tescom & Co., Ltd.), 13 September 2007 (13.09.2007), paragraphs [0012] to [0020]; fig. 1 to 3 (Family: none) | 1-9 |

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 23 July 2015 (23.07.15) | 04 August 2015 (04.08.15) |

| Name and mailing address of the ISA/ | Authorized officer |
|---|---|
| Japan Patent Office<br>3-4-3,Kasumigaseki,Chiyoda-ku,<br>Tokyo 100-8915,Japan | Telephone No. |

Form PCT/ISA/210 (second sheet) (July 2009)

**INTERNATIONAL SEARCH REPORT**

International application No.
PCT/JP2015/063982

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| Y | JP 2534856 Y2 (Takashi SUZUKI, Hiroyuki KONDO, Shiro TAKESHIGE), 07 May 1997 (07.05.1997), paragraphs [0007] to [0011] (Family: none) | 1-9 |
| Y | JP 2013-102826 A (Sharp Corp.), 30 May 2013 (30.05.2013), paragraph [0037]; fig. 8 to 16 & US 2014/0298670 A1 & WO 2013/069391 A & CN 104023586A | 3-4 |
| X<br>Y | JP 2000-506769 A (Koninklijke Philips Electronics N.V.), 06 June 2000 (06.06.2000), page 5, line 20 to page 9, line 4; fig. 1 to 4 & US 5894849 A & WO 1998/027842 A1 & EP 898452 A & CN 1215980 A | 5,8<br>6-7,9 |
| Y | JP 2000-175723 A (Matsushita Electric Works, Ltd.), 27 June 2000 (27.06.2000), paragraphs [0015], [0021]; fig. 2 (Family: none) | 6-7 |



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Page 1702 of 1998

国際調査報告

国際出願番号　ＰＣＴ／ＪＰ２０１５／０６３９８２

Ａ．　発明の属する分野の分類（国際特許分類（ＩＰＣ））

Int.Cl.　A45D20/12(2006.01)i, A45D20/50(2006.01)i

Ｂ．　調査を行った分野

調査を行った最小限資料（国際特許分類（ＩＰＣ））

Int.Cl.　A45D20/12, A45D20/50

最小限資料以外の資料で調査を行った分野に含まれるもの

| | |
|---|---|
| 日本国実用新案公報 | １９２２－１９９６年 |
| 日本国公開実用新案公報 | １９７１－２０１５年 |
| 日本国実用新案登録公報 | １９９６－２０１５年 |
| 日本国登録実用新案公報 | １９９４－２０１５年 |

国際調査で使用した電子データベース（データベースの名称、調査に使用した用語）

Ｃ．　関連すると認められる文献

| 引用文献のカテゴリー＊ | 引用文献名　及び一部の箇所が関連するときは、その関連する箇所の表示 | 関連する請求項の番号 |
|---|---|---|
| Y | JP 62-192108 A (松下電工株式会社) 1987.08.22, 第1頁左下欄18行-第2頁左上欄第3行、第2頁左下欄第3行-第19行、第6-9図、第12図（ファミリーなし） | 1-9 |
| Y | JP 2007-229316 A (株式会社テスコム) 2007.09.13, [0012]-[0020], [図1]-[図3]（ファミリーなし） | 1-9 |
| Y | JP 2534856 Y2 (鈴木　高志, 近藤　宏行, 武重　史郎) 1997.05.07, [0007]-[0011]（ファミリーなし） | 1-9 |

☑　Ｃ欄の続きにも文献が列挙されている。

☐　パテントファミリーに関する別紙を参照。

＊　引用文献のカテゴリー

「Ａ」特に関連のある文献ではなく、一般的技術水準を示すもの

「Ｅ」国際出願日前の出願または特許であるが、国際出願日以後に公表されたもの

「Ｌ」優先権主張に疑義を提起する文献又は他の文献の発行日若しくは他の特別な理由を確立するために引用する文献（理由を付す）

「Ｏ」口頭による開示、使用、展示等に言及する文献

「Ｐ」国際出願日前で、かつ優先権の主張の基礎となる出願の日の後に公表された文献

「Ｔ」国際出願日又は優先日後に公表された文献であって出願と矛盾するものではなく、発明の原理又は理論の理解のために引用するもの

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「Ｙ」特に関連のある文献であって、当該文献と他の１以上の文献との、当業者にとって自明である組合せによって進歩性がないと考えられるもの

「＆」同一パテントファミリー文献

| 国際調査を完了した日 | 国際調査報告の発送日 |
|---|---|
| ２３．０７．２０１５ | ０４．０８．２０１５ |

| 国際調査機関の名称及びあて先 | 特許庁審査官（権限のある職員） | |
|---|---|---|
| 日本国特許庁（ＩＳＡ／ＪＰ）<br>郵便番号１００－８９１５<br>東京都千代田区霞が関三丁目４番３号 | 武井　健浩 | ３Ｋ　３２２４ |
| | 電話番号　０３－３５８１－１１０１　内線　３３３２ | |

様式ＰＣＴ／ＩＳＡ／２１０（第２ページ）（２００９年７月）

SharkNinja Ex. 1002
Page 1703 of 1998

C（続き）．　関連すると認められる文献

| 引用文献のカテゴリー＊ | 引用文献名　及び一部の箇所が関連するときは、その関連する箇所の表示 | 関連する請求項の番号 |
|---|---|---|
| Y | JP 2013-102826 A（シャープ株式会社）2013.05.30, [0037], [図8]-[図16] & US 2014/0298670 A1 & WO 2013/069391 A & CN 104023586 A | 3-4 |
| X<br>Y | JP 2000-506769 A（コーニンクレッカ　フィリップス　エレクトロニクス　エヌ　ヴィ）2000.06.06, 第5頁第20行-第9頁第4行, [図1]-[図4] & US 5894849 A & WO 1998/027842 A1 & EP 898452 A & CN 1215980 A | 5,8<br>6-7,9 |
| Y | JP 2000-175723 A（松下電工株式会社）2000.06.27, [0015], [0021], [図2]（ファミリーなし） | 6-7 |



SharkNinja Ex. 1002
Page 1704 of 1998

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 14656357 |
| **Filing Date:** | 12-Mar-2015 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Filer:** | Christopher Elmose Gloria/Donna Bernecker |
| **Attorney Docket Number:** | 424662093300 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| Extension - 2 months with $200 paid | 1252 | 1 | 400 | 400 |
| **Miscellaneous:** | | | | |
| RCE- 2ND AND SUBSEQUENT REQUEST | 1820 | 1 | 1900 | 1900 |
| | | **Total in USD ($)** | | **2300** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 34406464 |
| **Application Number:** | 14656357 |
| **International Application Number:** | |
| **Confirmation Number:** | 9085 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Customer Number:** | 25227 |
| **Filer:** | Christopher Elmose Gloria/Donna Bernecker |
| **Filer Authorized By:** | Christopher Elmose Gloria |
| **Attorney Docket Number:** | 424662093300 |
| **Receipt Date:** | 27-NOV-2018 |
| **Filing Date:** | 12-MAR-2015 |
| **Time Stamp:** | 15:54:29 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $2300 |
| RAM confirmation Number | 112818INTEFSW00003195031952 |
| Deposit Account | |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Request for Continued Examination (RCE) | RCE_424662093300.pdf | 75730<br>c5a26f665e1f9fe3b1cddba8ac4a619d1041ad82 | no | 3 |
| **Warnings:** | | | | | |
| This is not a USPTO supplied RCE SB30 form. | | | | | |
| **Information:** | | | | | |
| 2 | Information Disclosure Statement (IDS) Form (SB08) | SB08_424662093300.pdf | 141218<br>bdab6525c6a7f1e3f4737427621f6d5427fcfa17 | no | 5 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| This is not an USPTO supplied IDS fillable form | | | | | |
| 3 | Foreign Reference | CN_101662969.pdf | 2914650<br>ccb8cff64c2ba3836e189dd23577b19934602f04 | no | 25 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Foreign Reference | CN_204838408.pdf | 945685<br>69e41c52a827b23578882f781bd24957642942a2 | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | Foreign Reference | JP_2004_222745.pdf | 848044<br>091291d57641c62b24ae95ef0214f5e6286a84a9 | no | 18 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 6 | Foreign Reference | JP_2005_177155.pdf | 1912063<br>7e0eb3a485b4731eb1eea5bdd171454e1458e142 | no | 34 |

| | | | | | |
|---|---|---|---|---|---|
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 7 | Foreign Reference | JP_2010_201067.pdf | 668787<br>64b643624999065dc50a39ffd4256a63e434e9d7 | no | 19 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 8 | Foreign Reference | JP_2016_16328.pdf | 4660749<br>6a15303fca53f8a11efbb358ffd98f8d02904109 | no | 35 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 9 | Foreign Reference | JP_3233749.pdf | 383853<br>9b0e62af0fe660ff86dd3442020482cca5af33a2 | no | 7 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 10 | Foreign Reference | JP_61_145248.pdf | 1110555<br>7fdf44bb98792f1757db3f9e5fc24a5790e6d151 | no | 24 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 11 | Foreign Reference | KR_20_0388514.pdf | 2841153<br>bf50b2c3c0c638014a28cc9f72af800bdd6ee60e | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 12 | Foreign Reference | RU_2417719.pdf | 8000670<br>b2af523da958a10145f76b69c9cc290f99085a9a | no | 73 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 13 | Foreign Reference | WO_2015_190217.pdf | 7517446<br>0de21cb78dd6757fe9953f2f2a7dedeac8eaa931 | no | 94 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 14 | Non Patent Literature | 14656432_2093400_06-29-2018.pdf | 1416816<br>26eac4dff9d2a6578d17ec6650736e546a61a5d9 | no | 14 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 15 | Fee Worksheet (SB06) | fee-info.pdf | 32470<br>6c0f0cccf93f053564dfb8939bd2dbecb6087a51 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 33469889 | | |

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**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**
**National Stage of an International Application under 35 U.S.C. 371**
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**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>14/656,357 | Filing Date<br>03/12/2015 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY**: ☒ LARGE ☐ SMALL ☐ MICRO

## APPLICATION AS FILED – PART I

| FOR | (Column 1) NUMBER FILED | (Column 2) NUMBER EXTRA | RATE ($) | FEE ($) |
|---|---|---|---|---|
| ☐ BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | |
| ☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m)) | N/A | N/A | N/A | |
| ☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | |
| TOTAL CLAIMS (37 CFR 1.16(i)) | minus 20 = | * | X $ = | |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | minus 3 = | * | X $ = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | TOTAL | |

## APPLICATION AS AMENDED – PART II

| AMENDMENT | 11/27/2018 | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE ($) | ADDITIONAL FEE ($) |
|---|---|---|---|---|---|---|---|
| | Total (37 CFR 1.16(i)) | * 34 | Minus | ** 36 | = 0 | X $100 = | 0 |
| | Independent (37 CFR 1.16(h)) | * 2 | Minus | *** 3 | = 0 | X $460 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | |
| | | | | | | TOTAL ADD'L FEE | 0 |

| AMENDMENT | 11/27/2018 | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE ($) | ADDITIONAL FEE ($) |
|---|---|---|---|---|---|---|---|
| | Total (37 CFR 1.16(i)) | * 34 | Minus | ** 36 | = 0 | X $100 = | 0 |
| | Independent (37 CFR 1.16(h)) | * 2 | Minus | *** 3 | = 0 | X $460 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | |
| | | | | | | TOTAL ADD'L FEE | 0 |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
GLORIA NORRIS

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 14/656,357 | 03/12/2015 | Alasdair Michael MACLAINE | 424662093300 | 9085 |

25227 7590 12/14/2018

MORRISON & FOERSTER LLP
1650 TYSONS BOULEVARD
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MCLEAN, VA 22102

| EXAMINER | |
|---|---|
| GILL, JENNIFER FRANCES | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3772 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 12/14/2018 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

EOfficeVA@mofo.com
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| *Office Action Summary* | Application No. 14/656,357 | Applicant(s) MACLAINE, Alasdair Michael | |
|---|---|---|---|
| | Examiner JENNIFER F GILL | Art Unit 3772 | AIA Status Yes |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☑ Responsive to communication(s) filed on 7/20/18.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims***

5) ☑ Claim(s) 1,3-5,7-17,19-21 and 23-38 is/are pending in the application.

5a) Of the above claim(s) 17,19-21 and 23-35 is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1,3-5. 7-16, 36-38 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

**Application Papers**

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 11/27/18.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/27/18 has been entered.

### *Notice of Pre-AIA or AIA Status*

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

### *Priority*

Receipt is acknowledged of certified copies of papers required by 37 CFR 1.55.

### *Information Disclosure Statement*

The information disclosure statement(s) (IDS) submitted on 11/27/18 was/were filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement(s) has/have been considered by the examiner.

### *Claim Objections*

**Claim 1** is objected to because of the following informalities:

**Claim 1**, line 7, replace “the-wall” with --the wall-- for clarity.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of 35 U.S.C. 112(b):

> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.
>
> The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph: The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 1, 3-5, 7-16 and 36-38 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.**

**Claim 1** was amended to recite "an inlet in a first portion of the attachment; an outlet in a cylindrical second portion of the attachment...near an inlet end...distal end"; however, there is no structural relationship between the "inlet in a first portion" and "inlet end" or between this "distal end" and the now "first and second portions of the attachment" resulting in a gap between the elements.

**Claim 37** line 2 recites "between adjacent wall sections" however no "wall sections" are set forth in any of the preceding claims, only "a wall" in claim 1 making it unclear what exactly is being claimed. Clarification or correction is requested.

**Claim 38** depends from claim 37 and then recites "an edge of a first wall section to an edge of a second wall section" without tying either of these "wall sections" back to those set forth in claim 37 creating additional clarity issues. Clarification or correction is requested.

***Claim Rejections - 35 USC § 102***

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of

rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.
>
> (a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

**Claim(s) 1, 3-5, 7-8, 11-13, 15-16, and 36-38 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by, or unpatentable over, McDougall et al (US 5212366).**

Regarding the attachment being "configured to direct fluid flow emitted from the outlet along and around the external surface of the attachment" and "configured so that in use, the fluid emitted from the outlet is attached to the surface of the attachment", the applicant is respectfully advised that it has been held by the courts that where a prior art apparatus is identical or substantially identical in structure, claimed properties or functional characteristics are presumed to be inherent, and a prima facie case of either anticipation or obviousness has been established. In this case, McDougall discloses all the structural features of the claimed invention (as detailed below) and was therefore considered to anticipate the functional limitations.

**Claim 1**, McDougall teaches a cylindrical (see Figs 1-98) attachment (2) for a handheld appliance (1) comprising an inlet (17) in a first portion of the attachment; an outlet in a cylindrical second portion exterior portion of the attachment in the form of

slots between plates (3, see Fig 5a) and a fluid flow path between the inlet and outlet and the slots extends from near an inlet of the attachment towards a distal end of the attachment and wherein the outlet slots are at least partially defined by the external surface of the attachment such that fluid emitted from the outlet is blown along and around an internal and external surface of the attachment (since it flows from the internal to the external surface in use) and fluid emitted from the outlet can flow around the external surface of the attachment (Col 3, 1-10; see Figs 1-5); particularly since hair wrapped around the device in use would act as a baffle, helping to force the airflow to be "directed along and around the external surface of the attachment". The external surface of the plates carry bristles (3b) and the outward facing surface of the plates combined with the bristles, together, form an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot and the slots between the plates (3) when in the expanded state extend substantially along a length of the attachment (see Figs 1-2).

**Claim 3**, McDougall teaches the outlet comprises a plurality of slots between the plates (3; see Figs 1-2).

**Claim 4**, McDougall teaches the fluid emitted from the outlet is capable of emitting from the outlet tangential to the external surface of the attachment depending on the expanded state of the plates (3; see Figs 1-5).

**Claim 5**, McDougall teaches the heated fluid emitted from the outlet is attracted to the surface of the attachment by virtue of the metal reinforcement rods (3f) in each plate (3) because metal is a known heat conductor so the heat would be attracted to this surface thereby meeting the claim limitations as best understood (see Figs 1-5).

**Claim 7**, McDougall teaches the outlet comprises at least two slots (see Fig 5a).

**Claim 8**, McDougall teaches the attachment has a longitudinal axis extending from the inlet end to the distal end and the slots are parallel to the longitudinal axis (see Figs 1-5).

**Claims 11-13**, McDougall teaches there is a flow directing element (3d & 3e & 5 & 12 & 13) between the inlet and outlet and these elements constitute "flow directing elements" because in use the air flows over or through these elements, thereby causing a redirection of the airflow by their presence (see Figs 1-2). At least one of these flow directing elements is formed as a perforated (3d & 3e) layer (see Figs 1-5). Since Merriam-Webster defines mesh as "a weblike pattern or construction" and the flow direction element has a series of spaced holes (3d & 3e) forming a "weblike pattern", the perforated layer is formed from a mesh of elongate material as claimed (see Figs 1-5).

**Claims 15-16**, McDougall teaches the flow directing element (3d & 3e & 5) extending substantially along a length of the at least one slot (see Figs 1-5).

**Claims 36-38**, McDougall teaches the wall comprising a plurality of plates (3) with the slot formed by a gap between adjacent plates forming the wall with the plurality of plates joined by a pair of spacers (111 & 112) that are disposed between the beginning and the end of the at least one slot to maintain the gap that forms the slot(s) and these spacers extend from an edge of a first plate to a an edge of an adjacent second plate of the plurality of plates forming the wall (see Figs 1-9).

**Claim(s) 1, 3-5, 7-16 and 36-38 is/are rejected under 35 U.S.C. 102(a)(2) as being anticipated by, or unpatentable, over Doran (US 20160000201).**

**Claim 1**, Doran teaches an attachment (30, Fig 2a) for a handheld appliance comprising: an inlet in a first portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet (slots 102) with the outlet comprising at least one slot (102) extending from near an inlet end of the attachment towards a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of the wall of the attachment and is configured so that in use, fluid emitted from the fluid outlet is attracted to, and flows around, an external surface [0047] of the attachment with the external surface of the wall being an outermost surface of the attachment along a length of the attachment from a beginning to an end of the at least one slot.

**Claim 3**, the outlet comprises a plurality of slots (102, see Figs 1-5) radially spaced around the attachment.

**Claims 4-5**, the attachment is configured so that a direction of fluid flow emitted from the at least one slot is tangential to the body [0104] and fluid exiting the fluid outlet is attracted to the external surface of the attachment [0047] (see Figs 1-5).

**Claim 7**, the attachment comprises at least two slots (see Figs 1-5).

**Claim 8**, the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is parallel to the longitudinal axis (see Figs 1-5).

**Claims 9-10**, the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is non-parallel to the longitudinal axis; the slot can be formed as a spiral or helix around the body (see Figs 4-6) in either the clockwise or counter-clockwise directions [0053].

**Claims 11-16** the plates can be lined with a material (308) [0108] that can extend substantially along a length of the at least one slot and around an inner circumference of the attachment (see Figs 1-5) and this material can include Kevlar [0108] which constitutes a flow directing element because fluid flows around these lining materials and Kevlar constitutes a perforated wire mesh weave layer because that's what Kevlar is.

**Claims 36-38**, the wall comprises a plurality of plates (110) with the at least one slot formed by a gap between adjacent plates of the wall joined by at least a pair of spacers (108, Fig 2b) spaced longitudinally along the attachment with the spacers extending from an edge of the first plate to an edge of the second plate (see Fig 2b), or wall.

The applied reference has a common assignee with the instant application. Based upon the earlier effectively filed date of the reference, it constitutes prior art under 35 U.S.C. 102(a)(2). This rejection under 35 U.S.C. 102(a)(2) might be overcome by: (1) a showing under 37 CFR 1.130(a) that the subject matter disclosed in the reference was obtained directly or indirectly from the inventor or a joint inventor of this application and is thus not prior art in accordance with 35 U.S.C. 102(b)(2)(A); (2) a showing under 37 CFR 1.130(b) of a prior public disclosure under 35 U.S.C. 102(b)(2)(B) if the same invention is not being claimed; or (3) a statement pursuant to 35 U.S.C. 102(b)(2)(C) establishing that, not later than the effective filing date of the claimed invention, the subject matter disclosed in the reference and the claimed invention were either owned by the same person or subject to an obligation of assignment to the same person or subject to a joint research agreement.

***Response to Arguments***

Applicant's arguments filed 10/29/18 have been fully considered but they are not persuasive.

Applicant argues that the device of McDougall does not perform the functional recitations set forth in applicant's claims in applicant's opinion (note applicant does not provide any factual evidence that the air of the McDougall device cannot "direct fluid flow emitted from the outlet along and around the external surface of the attachment"). While applicant argues that McDougall fails to teach the device being "configured to direct flow emitted from the outlet along and around the external surface of the wall"; however, the fact that McDougall discloses air being emitted from the outlet through the wall means that air will be "around the external surface of the wall" during use and that air will be "along the external surface of the wall" during use, meaning the device meets the claim limitations. As discussed with applicant's representative at length, adding structural limitations to the claim, specifically the structure that causes this claimed function, would be more effective to overcome the reference.

It appears that applicant is interpreting their functional limitations in a more limited sense than the office is allowed during prosecution. During prosecution all terms must be given their broadest reasonable interpretation.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Gill whose telephone number is (571)270-17971797. The examiner can normally be reached on Monday-Friday 10:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, ***please contact the examiner's supervisor, Cris Rodriguez, at* (571) 272-4964**. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JENNIFER GILL/
Examiner, Art Unit 3732

/TATIANA L NOBREGA/
Primary Examiner, Art Unit 3772

| Notice of References Cited | Application/Control No. 14/656,357 | Applicant(s)/Patent Under Reexamination MACLAINE, Alasdair Michael | |
|---|---|---|---|
| | Examiner JENNIFER F GILL | Art Unit 3772 | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | CPC Classification | US Classification |
|---|---|---|---|---|---|---|
| * | A | US-20160000201-A1 | 01-2016 | DORAN; Emma Victoria | A45D20/10 | 132/228 |
| | B | | | | | |
| | C | | | | | |
| | D | | | | | |
| | E | | | | | |
| | F | | | | | |
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**FOREIGN PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Country | Name | CPC Classification |
|---|---|---|---|---|---|---|
| | N | | | | | |
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**NON-PATENT DOCUMENTS**

| * | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|---|
| | U | |
| | V | |
| | W | |
| | X | |

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 14/656,357 | MACLAINE, Alasdair Michael |
| | Examiner | Art Unit |
| | JENNIFER F GILL | 3772 |

| CPC - Searched* | | |
|---|---|---|
| **Symbol** | **Date** | **Examiner** |
| A45D 1/02, 2/06, 2/10, 2/125, 2/127, 2/14, 2/24, 2/2407, 2/2414, 2/2421, 2/245, 2/2457, 2/2485, 2/2492, 20/10, 20/122, 20/124, 20/50 | 1/25-2/3/17 | JG |
| A46B 9/023, 15/003 | 1/25-2/3/17 | JG |

| CPC Combination Sets - Searched* | | |
|---|---|---|
| **Symbol** | **Date** | **Examiner** |
| | | |

| US Classification - Searched* | | | |
|---|---|---|---|
| **Class** | **Subclass** | **Date** | **Examiner** |
| | | | |

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

| | |
|---|---|
| /TATIANA L NOBREGA/<br>Primary Examiner, Art Unit 3772 | /JENNIFER GILL/<br>Examiner.Art Unit 3776 |

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 14/656,357 | MACLAINE, Alasdair Michael |
| | Examiner | Art Unit |
| | JENNIFER F GILL | 3772 |

| Search Notes | | |
|---|---|---|
| **Search Notes** | **Date** | **Examiner** |
| 132.CLAS (WITH TEXT SEE EAST HISTORY) | 1/25-2/3/17 | JG |
| USPC SEARCH WITH TEXT | 1/25-2/3/17 | JG |
| CPC SEARCH | 1/25-2/3/17 | JG |
| INVENTOR SEARCH | 1/25-2/3/17 | JG |
| ASSIGNEE SEARCH | 1/25-2/3/17 | JG |
| TEXT SEARCH (SEE EAST HISTORY) | 1/25-2/3/17 | JG |
| NPL SEARCH | 1/25-2/3/17 | JG |
| CONSULT WITH KIM SANG OF USPC 242 | 1/25-2/3/17 | JG |
| A45D 1/02, 2/06, 2/10, 2/125, 2/127, 2/14, 2/24, 2/2407, 2/2414, 2/2421, 2/245, 2/2457, 2/2485, 2/2492, 20/10, 20/122, 20/124, 20/50 | 1/25-2/3/17 | JG |
| A46B 9/023, 15/003 | 1/25-2/3/17 | JG |
| updated search notes | 7/31-8/3/17 | jg |
| updated search notes | 12/29/17-1/2/18 | jg |

| Interference Search | | | |
|---|---|---|---|
| **US Class/CPC Symbol** | **US Subclass/CPC Group** | **Date** | **Examiner** |
| | | | |

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|---|---|
| /TATIANA L NOBREGA/<br>Primary Examiner, Art Unit 3772 | /JENNIFER GILL/<br>Examiner.Art Unit 3776 |



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**EAST Search History**

**EAST Search History (Prior Art)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| S1 | 31 | ("4214597" \| "20150265022" \| "20150265023" \| "20130111777" \| "5868910" \| "3857016" \| "20070137060" \| "3981313" \| "4471791" \| "20110198421" \| "20080041406" \| "20040129289" \| "5661910" \| "3814898" \| "3800810").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2016/12/01 12:41 |
| S2 | 6 | (("MACLAINE") near3 ("Alasdair")).INV. | US-PGPUB; USPAT; USOCR | OR | ON | 2016/12/01 12:45 |
| S3 | 15 | (("TWEEDIE") near3 ("Robert")).INV. | US-PGPUB; USPAT; USOCR | OR | ON | 2016/12/01 12:45 |
| S4 | 1 | ("20130319450").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2016/12/01 13:03 |
| S5 | 3 | ("4214597").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2016/12/01 13:07 |
| S6 | 23 | ("1385797" \| "1526480" \| "2624350" \| "3265075" \| "3586820" \| "3680565" \| "4003389").PN. OR ("4214597").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2016/12/01 13:07 |
| S7 | 2642 | "132".clas. and ((hair) same (curl$3 mandrel wind$3) same (groov$3 slot$3 slit$3 aperture hole vent$3)) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2016/12/02 09:24 |
| S8 | 25 | ("4163143" \| "2589510" \| "3926200" \| "20120272994" \| "8132573" \| "20140144458" \| "20130319450" \| "5983903").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2016/12/02 09:27 |
| S9 | 6 | ("2014/0083446").URPN. | USPAT | OR | ON | 2016/12/02 10:31 |
| S10 | 1 | ("2010/0269847").URPN. | USPAT | OR | ON | 2016/12/02 |



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Page 1726 of 1998

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|---|---|---|---|---|---|---|
| | | | | | | 11:08 |
| S11 | 0 | ("2009/0293901").URPN. | USPAT | OR | ON | 2016/12/02 11:09 |
| S12 | 0 | ("2009/0293901").URPN. | USPAT | OR | ON | 2016/12/02 11:09 |
| S13 | 38 | ("1892107" \| "1894431" \| "1926987" \| "1957049" \| "2720207" \| "3108603" \| "3232300" \| "3523542" \| "3590829" \| "3871388" \| "4022225" \| "4022226" \| "4270555" \| "4456020" \| "4524788" \| "4584462" \| "4714820" \| "4856542" \| "4911186" \| "5000200" \| "5020552" \| "5024244" \| "5186187" \| "5293884" \| "5294777" \| "5411040").PN. OR ("5890496").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2016/12/02 11:35 |
| S14 | 32 | ("0056531" \| "0720169" \| "1115057" \| "2335179" \| "2557510" \| "2781047" \| "3105503" \| "3123079" \| "3326495" \| "3623491" \| "3683940" \| "3712310" \| "4141370").PN. OR ("4456020").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2016/12/02 11:38 |
| S15 | 35 | ("3413984" \| "3835869" \| "3843990" \| "3868495" \| "3871391" \| "3890984" \| "3955065" \| "4291714" \| "4295283" \| "4431012" \| "4502496" \| "4566473" \| "4664132" \| "4692594" \| "4759135" \| "4934855" \| "5012576" \| "5060398" \| "5091630" \| "5373607" \| "5479951" \| "5515874" \| "5765575" \| "D365685" \| "D365686" \| "D366152" \| "D366566" \| "D374776").PN. OR ("5868148").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2016/12/02 12:04 |
| S16 | 18 | ("2430766" \| "2750948" \| "2769449" \| "2781047").PN. OR ("4291714").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2016/12/02 12:11 |
| S17 | 37 | ("2156948" \| "2234050" \| "2244897" \| "2319658" \| "2575184" \| "3605763" \| "3916919" \| "4524788" \| "4526184" \| "4572221" \| "4603706" \| "4627452" \| "4974613" \| "5000200" \| "5215107" \| "5400810" \| "5482060").PN. OR ("5740820").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2016/12/02 12:15 |
| S18 | 31 | ("4023578").PN. OR ("5212366").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2016/12/02 14:35 |
| S19 | 2618 | "132".clas. and ((hair) same (curl$3 mandrel wind$3) same (groov$3 slot$3 slit$3 aperture hole vent$3)) | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 13:47 |
| S20 | 40 | ("2325316" \| "2809642" \| "2905186" \| "3376875" \| "3399684" \| "3578947" \| "3918465" \| "4075458" \| "4145600").PN. OR ("4267851").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 14:25 |
| S21 | 0 | ("2015/0265023").URPN. | USPAT | OR | ON | 2017/01/30 14:26 |
| S22 | 15 | ("4214597" \| "20150265023" \| "20130111777" \| "3857016" \| "20070137060" \| "3981313" \| "4471791" \| "20110198421" \| "5868148" \| "20080041406" \| "20150265024" \| "20140366910" \| "20040129289" \| | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 14:27 |

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|---|---|---|---|---|---|---|
| | | "5661910" \| "3814898").PN. | | | | |
| S23 | 2 | ("2014/0366910").URPN. | USPAT | OR | ON | 2017/01/30 14:27 |
| S24 | 0 | ("2011/0198421").URPN. | USPAT | OR | ON | 2017/01/30 14:34 |
| S25 | 7 | ("2008/0041406").URPN. | USPAT | OR | ON | 2017/01/30 14:36 |
| S26 | 2 | ("2007/0137060").URPN. | USPAT | OR | ON | 2017/01/30 14:43 |
| S27 | 35 | ("3413984" \| "3835869" \| "3843990" \| "3868495" \| "3871391" \| "3890984" \| "3955065" \| "4291714" \| "4295283" \| "4431012" \| "4502496" \| "4566473" \| "4664132" \| "4692594" \| "4759135" \| "4934855" \| "5012576" \| "5060398" \| "5091630" \| "5373607" \| "5479951" \| "5515874" \| "5765575" \| "D365685" \| "D365686" \| "D366152" \| "D366566" \| "D374776").PN. OR ("5868148").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 14:56 |
| S28 | 2 | ("3204645").URPN. | USPAT | OR | ON | 2017/01/30 16:08 |
| S29 | 9 | ("2910989").URPN. | USPAT | OR | ON | 2017/01/30 16:29 |
| S30 | 2 | ("2008656").URPN. | USPAT | OR | ON | 2017/01/30 18:10 |
| S31 | 31 | ("4214597" \| "20150265022" \| "20150265023" \| "20130111777" \| "5868910" \| "3857016" \| "20070137060" \| "3981313" \| "4471791" \| "20110198421" \| "20080041406" \| "20040129289" \| "5661910" \| "3814898" \| "3800810").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2017/01/30 18:13 |
| S32 | 6 | (("MACLAINE") near3 ("Alasdair")).INV. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 18:13 |
| S33 | 15 | (("TWEEDIE") near3 ("Robert")).INV. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 18:13 |
| S34 | 1 | ("20130319450").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2017/01/30 18:13 |
| S35 | 3 | ("4214597").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2017/01/30 18:13 |
| S36 | 23 | ("1385797" \| "1526480" \| "2624350" \| "3265075" \| "3586820" \| "3680565" \| "4003389").PN. OR ("4214597").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 18:13 |
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| S37 | 26 | ("4163143" \| "2589510" \| "3926200" \| "20120272994" \| "8132573" \| "20140144458" \| "20130319450" \| "5983903").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2017/01/30 18:13 |
| S38 | 6 | ("2014/0083446").URPN. | USPAT | OR | ON | 2017/01/30 18:13 |
| S39 | 1 | ("2010/0269847").URPN. | USPAT | OR | ON | 2017/01/30 18:13 |
| S40 | 38 | ("1892107" \| "1894431" \| "1926987" \| "1957049" \| "2720207" \| "3108603" \| "3232300" \| "3523542" \| "3590829" \| "3871388" \| "4022225" \| "4022226" \| "4270555" \| "4456020" \| "4524788" \| "4584462" \| "4714820" \| "4856542" \| "4911186" \| "5000200" \| "5020552" \| "5024244" \| "5186187" \| "5293884" \| "5294777" \| "5411040").PN. OR ("5890496").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 18:13 |
| S41 | 32 | ("0056531" \| "0720169" \| "1115057" \| "2335179" \| "2557510" \| "2781047" \| "3105503" \| "3123079" \| "3326495" \| "3623491" \| "3683940" \| "3712310" \| "4141370").PN. OR ("4456020").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 18:13 |
| S42 | 35 | ("3413984" \| "3835869" \| "3843990" \| "3868495" \| "3871391" \| "3890984" \| "3955065" \| "4291714" \| "4295283" \| "4431012" \| "4502496" \| "4566473" \| "4664132" \| "4692594" \| "4759135" \| "4934855" \| "5012576" \| "5060398" \| "5091630" \| "5373607" \| "5479951" \| "5515874" \| "5765575" \| "D365685" \| "D365686" \| "D366152" \| "D366566" \| "D374776").PN. OR ("5868148").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 18:13 |
| S43 | 18 | ("2430766" \| "2750948" \| "2769449" \| "2781047").PN. OR ("4291714").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 18:13 |
| S44 | 37 | ("2156948" \| "2234050" \| "2244897" \| "2319658" \| "2575184" \| "3605763" \| "3916919" \| "4524788" \| "4526184" \| "4572221" \| "4603706" \| "4627452" \| "4974613" \| "5000200" \| "5215107" \| "5400810" \| "5482060").PN. OR ("5740820").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 18:13 |
| S45 | 31 | ("4023578").PN. OR ("5212366").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/30 18:13 |
| S46 | 51 | a45d20/50.cpc. and (S19 S20 S21 S22 S23 S25 S26 S27 S28 S29 S30 S31 S32 S33 S34 S35 S36 S37 S38 S39 S40 S41 S42 S43 S44 S45) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/30 18:13 |
| S47 | 15 | a45d20/10.cpc. and (S19 S20 S21 S22 S23 S25 S26 S27 S28 S29 S30 S31 S32 S33 S34 S35 S36 S37 S38 S39 S40 S41 S42 S43 S44 S45 S46) | US-PGPUB; USPAT; USOCR; | OR | ON | 2017/01/30 18:17 |



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| | | | FPRS | | | |
| S48 | 10 | a45d20/122.cpc. and (S19 S20 S21 S22 S23 S25 S26 S27 S28 S29 S30 S31 S32 S33 S34 S35 S36 S37 S38 S39 S40 S41 S42 S43 S44 S45 S46 S47) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/30 18:19 |
| S49 | 53 | a46b9/023.cpc. and (S19 S20 S21 S22 S23 S25 S26 S27 S28 S29 S30 S31 S32 S33 S34 S35 S36 S37 S38 S39 S40 S41 S42 S43 S44 S45 S46 S47 S48) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/30 18:19 |
| S50 | 2618 | "132".clas. and ((hair) same (curl$3 mandrel wind$3) same (groov$3 slot$3 slit$3 aperture hole vent$3)) | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 11:01 |
| S51 | 40 | ("2325316" \| "2809642" \| "2905186" \| "3376875" \| "3399684" \| "3578947" \| "3918465" \| "4075458" \| "4145600").PN. OR ("4267851").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 11:01 |
| S52 | 0 | ("2015/0265023").URPN. | USPAT | OR | ON | 2017/01/31 11:01 |
| S53 | 15 | ("4214597" \| "20150265023" \| "20130111777" \| "3857016" \| "20070137060" \| "3981313" \| "4471791" \| "20110198421" \| "5868148" \| "20080041406" \| "20150265024" \| "20140366910" \| "20040129289" \| "5661910" \| "3814898").PN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 11:01 |
| S54 | 2 | ("2014/0366910").URPN. | USPAT | OR | ON | 2017/01/31 11:01 |
| S55 | 7 | ("2008/0041406").URPN. | USPAT | OR | ON | 2017/01/31 11:01 |
| S56 | 2 | ("2007/0137060").URPN. | USPAT | OR | ON | 2017/01/31 11:01 |
| S57 | 35 | ("3413984" \| "3835869" \| "3843990" \| "3868495" \| "3871391" \| "3890984" \| "3955065" \| "4291714" \| "4295283" \| "4431012" \| "4502496" \| "4566473" \| "4664132" \| "4692594" \| "4759135" \| "4934855" \| "5012576" \| "5060398" \| "5091630" \| "5373607" \| "5479951" \| "5515874" \| "5765575" \| "D365685" \| "D365686" \| "D366152" \| "D366566" \| "D374776").PN. OR ("5868148").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 11:01 |
| S58 | 2 | ("3204645").URPN. | USPAT | OR | ON | 2017/01/31 11:01 |
| S59 | 9 | ("2910989").URPN. | USPAT | OR | ON | 2017/01/31 11:01 |
| S60 | 2 | ("2008656").URPN. | USPAT | OR | ON | 2017/01/31 11:01 |
| S61 | 31 | ("4214597" \| "20150265022" \| "20150265023" \| "20130111777" \| "5868910" \| "3857016" \| "20070137060" \| "3981313" \| "4471791" \| "20110198421" \| "20080041406" \| "20040129289" \| "5661910" \| "3814898" \| "3800810").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2017/01/31 11:01 |
| S62 | 6 | (("MACLAINE") near3 ("Alasdair")).INV. | US-PGPUB; | OR | ON | 2017/01/31 11:01 |



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|---|---|---|---|---|---|---|
| | | | USPAT; USOCR | | | |
| S63 | 15 | (("TWEEDIE") near3 ("Robert")).INV. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 11:01 |
| S64 | 1 | ("20130319450").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2017/01/31 11:01 |
| S65 | 3 | ("4214597").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2017/01/31 11:01 |
| S66 | 23 | ("1385797" \| "1526480" \| "2624350" \| "3265075" \| "3586820" \| "3680565" \| "4003389").PN. OR ("4214597").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 11:01 |
| S67 | 26 | ("4163143" \| "2589510" \| "3926200" \| "20120272994" \| "8132573" \| "20140144458" \| "20130319450" \| "5983903").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2017/01/31 11:01 |
| S68 | 6 | ("2014/0083446").URPN. | USPAT | OR | ON | 2017/01/31 11:01 |
| S69 | 1 | ("2010/0269847").URPN. | USPAT | OR | ON | 2017/01/31 11:01 |
| S70 | 38 | ("1892107" \| "1894431" \| "1926987" \| "1957049" \| "2720207" \| "3108603" \| "3232300" \| "3523542" \| "3590829" \| "3871388" \| "4022225" \| "4022226" \| "4270555" \| "4456020" \| "4524788" \| "4584462" \| "4714820" \| "4856542" \| "4911186" \| "5000200" \| "5020552" \| "5024244" \| "5186187" \| "5293884" \| "5294777" \| "5411040").PN. OR ("5890496").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 11:01 |
| S71 | 32 | ("0056531" \| "0720169" \| "1115057" \| "2335179" \| "2557510" \| "2781047" \| "3105503" \| "3123079" \| "3326495" \| "3623491" \| "3683940" \| "3712310" \| "4141370").PN. OR ("4456020").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 11:01 |
| S72 | 35 | ("3413984" \| "3835869" \| "3843990" \| "3868495" \| "3871391" \| "3890984" \| "3955065" \| "4291714" \| "4295283" \| "4431012" \| "4502496" \| "4566473" \| "4664132" \| "4692594" \| "4759135" \| "4934855" \| "5012576" \| "5060398" \| "5091630" \| "5373607" \| "5479951" \| "5515874" \| "5765575" \| "D365685" \| "D365686" \| "D366152" \| "D366566" \| "D374776").PN. OR ("5868148").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 11:01 |

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|---|---|---|---|---|---|---|
| S73 | 18 | ("2430766" \| "2750948" \| "2769449" \| "2781047").PN. OR ("4291714").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 11:01 |
| S74 | 37 | ("2156948" \| "2234050" \| "2244897" \| "2319658" \| "2575184" \| "3605763" \| "3916919" \| "4524788" \| "4526184" \| "4572221" \| "4603706" \| "4627452" \| "4974613" \| "5000200" \| "5215107" \| "5400810" \| "5482060").PN. OR ("5740820").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 11:01 |
| S75 | 31 | ("4023578").PN. OR ("5212366").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 11:01 |
| S76 | 51 | a45d20/50.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 11:01 |
| S77 | 15 | a45d20/10.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 11:01 |
| S78 | 10 | a45d20/122.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 11:01 |
| S79 | 53 | a46b9/023.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 11:01 |
| S80 | 6 | a46b15/003.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 11:01 |
| S81 | 104 | a45d2/10.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 11:04 |
| S82 | 35 | a45d2/06.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 11:22 |
| S83 | 33 | a45d2/12.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 11:27 |
| S84 | 32 | a45d2/22.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 11:48 |



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|---|---|---|---|---|---|---|
| S85 | 93 | a45d2/24.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 11:54 |
| S86 | 0 | ("2500456").URPN. | USPAT | OR | ON | 2017/01/31 12:07 |
| S87 | 53 | a45d2/2407.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 12:08 |
| S88 | 11 | a45d2/245.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 12:14 |
| S89 | 10 | a45d20/122.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 12:30 |
| S90 | 35 | ("3413984" \| "3835869" \| "3843990" \| "3868495" \| "3871391" \| "3890984" \| "3955065" \| "4291714" \| "4295283" \| "4431012" \| "4502496" \| "4566473" \| "4664132" \| "4692594" \| "4759135" \| "4934855" \| "5012576" \| "5060398" \| "5091630" \| "5373607" \| "5479951" \| "5515874" \| "5765575" \| "D365685" \| "D365686" \| "D366152" \| "D366566" \| "D374776").PN. OR ("5868148").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/01/31 12:31 |
| S91 | 1 | a45d20/124.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 12:34 |
| S92 | 19 | a45d1/02.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 12:40 |
| S93 | 34 | 132/268.ccls. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91 S92) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 12:42 |
| S94 | 51 | a45d2/125.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91 S92 S93) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 12:52 |
| S95 | 19 | a45d2/127.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91 S92 S93 S94) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 12:53 |
| S96 | 67 | a45d2/14.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 | US-PGPUB; USPAT; | OR | ON | 2017/01/31 12:54 |



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|---|---|---|---|---|---|---|
| | | S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91 S92 S93 S94 S95) | USOCR; FPRS | | | |
| S97 | 15 | a45d2/2414.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91 S92 S93 S94 S95 S96) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 12:57 |
| S98 | 34 | a45d2/2421.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91 S92 S93 S94 S95 S96 S97) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 12:58 |
| S99 | 40 | a45d2/2457.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91 S92 S93 S94 S95 S96 S97 S98) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 12:59 |
| S100 | 23 | a45d2/2464.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91 S92 S93 S94 S95 S96 S97 S98 S99) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 13:01 |
| S101 | 27 | a45d2/2485.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91 S92 S93 S94 S95 S96 S97 S98 S99 S100) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 13:08 |
| S102 | 4 | a45d2/2492.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91 S92 S93 S94 S95 S96 S97 S98 S99 S100 S101) | US-PGPUB; USPAT; USOCR; FPRS | OR | ON | 2017/01/31 13:10 |
| S103 | 26 | ("4214597" \| "20150265022" \| "20150265023" \| "20130111777" \| "5868910" \| "3857016" \| "20070137060" \| "3981313" \| "4471791" \| "20110198421" \| "20080041406" \| "20040129289" \| "5661910" \| "3814898").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2017/02/01 10:18 |
| S104 | 3 | ("3583409").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2017/02/01 15:52 |
| S105 | 10 | ("1442260" \| "2592764").PN. OR ("3583409").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2017/02/01 15:53 |
| S106 | 2 | ("4295283").PN. | US-PGPUB; USPAT; USOCR; | OR | OFF | 2017/02/01 18:57 |



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| | | | | | | |
|---|---|---|---|---|---|---|
| | | | FPRS; EPO; JPO | | | |
| S107 | 31 | (("3696818") or ("3835869") or ("4430808") or ("4827105") or ("5091630") or ("5513665") or ("5546674") or ("5842286") or ("20020092196") or ("7124763") or ("20090145002") or ("8122896") or ("20130160316") or ("20140144037")).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2017/08/03 11:31 |
| S108 | 12 | ("2845834").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2017/08/03 15:02 |
| S109 | 11 | (("4197448") or ("6038782") or ("8353303") or ("20170273421") or ("20170273422") or ("20170273423")).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2018/01/02 12:24 |

**EAST Search History (Interference)**

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**12/ 4/ 2018 12:22:27 PM**
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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 14656357 |
| Filing Date | 2015-03-12 |
| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

**U.S.PATENTS**

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 3890984 | | 1975-06-24 | Lesetar | |
| | 2 | 8407913 | | 2013-04-02 | Langley, et al. | |
| | 3 | 9526310 | B2 | 2016-12-27 | Courtney, et al. | |

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**U.S.PATENT APPLICATION PUBLICATIONS**

| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 20140083446 | A1 | 2014-03-27 | Julemont, et al. | |
| | 2 | 20160000201 | A1 | 2016-01-07 | Doran | |

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**FOREIGN PATENT DOCUMENTS**

| Examiner Initial* | Cite No | Foreign Document Number[3] | Country Code[2] | Kind Code[4] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | T[5] |
|---|---|---|---|---|---|---|---|---|

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| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 101662969 | CN | | 2010-03-03 | SEB S.A. | Machine Translation | ☒ |
| | 2 | 204838408 | CN | | 2015-12-09 | Tianyue Huang | Machine Translation | ☒ |
| | 3 | 2004-222745 | JP | | 2004-08-12 | Matsushita Electric Works Ltd. | Machine Translation | ☒ |
| | 4 | 2005-177155 | JP | | 2005-07-07 | Kyushu Hitachi Maxell Ltd. | Machine Translation | ☒ |
| | 5 | 2010-201067 | JP | | 2010-09-16 | Sanyo Electric Co.; Sanyo Consumer Electronics Co. | Machine Translation | ☒ |
| | 6 | 2016-16328 | JP | | 2016-02-01 | Dyson Technology Limited | Corresponds to GB-2527834 previously cited | ☐ |
| | 7 | 3233749 | JP | | 2001-11-26 | | Machine Translation | ☒ |
| | 8 | 61-145248 | JP | | 1986-09-08 | | Machine Translation | ☒ |
| | 9 | 20-0388514 | KR | | 2005-06-30 | Jeong Ki Bock | Machine Translation | ☒ |
| | 10 | 2417719 | RU | | 2011-05-10 | Marija Viktorovna Rehjnman | Machine Translation | ☒ |
| | 11 | 2015/190217 | WO | | 2015-12-17 | Sharp Corp. | Machine Translation | ☒ |

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**( Not for submission under 37 CFR 1.99)**

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| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

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**NON-PATENT LITERATURE DOCUMENTS**

| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|
| | 1 | MacLaine et al., U.S. Office Action mailed June 29, 2018, directed to U.S. Application No. 14/656,432; 14 pages | ☐ |

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**EXAMINER SIGNATURE**

| Examiner Signature | /JENNIFER F GILL/ | Date Considered | 12/04/2018 |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

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|---|---|
| Application Number | 14656357 |
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| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

## CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

## SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /christopher gloria/ | Date (YYYY-MM-DD) | 2018-11-27 |
| Name/Print | Christopher Gloria | Registration Number | 71907 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Docket No.: 42466-20933.00

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357 | Confirmation No.: 9085

Filed: March 12, 2015 | Art Unit: 3772

For: ATTACHMENT FOR A HAND HELD APPLIANCE | Examiner: Jennifer Frances Gill

**AMENDMENT UNDER 37 C.F.R. 1.111**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the non-final Office Action mailed December 14, 2018, the period for response having been extended one (1) month to April 14, 2019, please amend this application as follows.

**Amendments to the claims** begin on page 2.

**Remarks** begin on page 7.

va-534424

## AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An attachment for a hand held appliance comprising an inlet in a ~~first~~ proximal portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending ~~from near an inlet end of the attachment~~ towards a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a wall of the attachment and is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of ~~the wall~~ the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion, and wherein the external surface of the wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot.

2. (Canceled)

3. (Original) The attachment of claim 1, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

4. (Canceled)

5. (Previously Presented) The attachment of claim 1, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the surface of the attachment.

6. (Canceled)

7. (Original) The attachment of claim 1, wherein the outlet comprises two slots.



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8. (Currently Amended) The attachment of claim 1, wherein the attachment has a longitudinal axis ~~extending from the inlet end to the distal end~~ and the at least one slot is parallel to the longitudinal axis.

9. (Currently Amended) The attachment of claim 1, wherein the attachment has a longitudinal axis ~~extending from the inlet end to the distal end~~ and the at least one slot is non-parallel to the longitudinal axis.

10. (Original) The attachment of claim 9, wherein the at least one slot is helical with respect to the longitudinal axis.

11. (Original) The attachment of claim 1, further comprising a flow directing element between the inlet and the outlet.

12. (Original) The attachment of claim 11, wherein the flow directing element comprises a perforated layer.

13. (Original) The attachment of claim 12, wherein the perforated layer is formed from a mesh or weave of an elongate material.

14. (Original) The attachment of claim 13, wherein the elongate material is a wire.

15. (Previously Presented) The attachment of claim 12, wherein the flow directing element extends substantially along a length of the at least one slot.

16. (Original) The attachment of claim 12, wherein the flow directing element extends substantially around an inner circumference of the attachment.

17. (Withdrawn-Currently Amended) A hand held appliance comprising a handle having a fluid flow path from handle inlet to a handle outlet, a fan unit for drawing fluid into the handle inlet, and an attachment for attaching to the handle, the attachment comprising an inlet in a ~~first~~ proximal



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portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending ~~from near an inlet end of the attachment~~ towards a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a wall of the attachment and is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion, and wherein the external surface of the wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot.

18. (Canceled)

19. (Withdrawn) The appliance of claim 17, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

20. (Canceled)

21. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the surface of the attachment.

22. (Canceled)

23. (Withdrawn) The appliance of claim 17, wherein the outlet comprises two slots.

24. (Withdrawn-Currently Amended) The appliance of claim 17, wherein the attachment has a longitudinal axis ~~extending from the inlet end to the distal end~~ and the at least one slot is parallel to the longitudinal axis.



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25. (Withdrawn-Currently Amended) The appliance of claim 17, wherein the attachment has a longitudinal axis ~~extending from the inlet end to the distal end~~ and the at least one slot is non-parallel to the longitudinal axis.

26. (Withdrawn) The appliance of claim 25, wherein the at least one slot is helical with respect to the longitudinal axis.

27. (Withdrawn) The appliance of claim 17, further comprising a flow directing element between the inlet and the outlet.

28. (Withdrawn) The appliance of claim 27, wherein the flow directing element comprises a perforated layer.

29. (Withdrawn) The appliance of claim 28, wherein the perforated layer is formed from a mesh or weave of an elongate material.

30. (Withdrawn) The appliance of claim 29, wherein the elongate material is a wire.

31. (Withdrawn-Previously Presented) The appliance of claim 27, wherein the flow directing element extends substantially along a length of the at least one slot.

32. (Withdrawn) The appliance of claim 27, wherein the flow directing element extends substantially around an inner circumference of the attachment.

33. (Withdrawn) The appliance of claim 17, wherein the appliance is a hair care appliance.

34. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling appliance.

35. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling brush.

36. (Previously Presented) The appliance of claim 1, wherein the wall comprises a plurality of plates.



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37. (Currently Amended) The appliance of claim 1, wherein the at least one slot is formed by a gap between adjacent [[wall]] sections of the wall that are joined by at least one spacer disposed between the beginning of the at least one slot and the end of the at least one slot to maintain the gap.

38. (Currently Amended) The appliance of claim 37, wherein the at least one spacer extends from an edge of a first [[wall]] section of the wall to an edge of a second [[wall]] section of the wall.



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## REMARKS

Claims 1, 8, 9, 17, 24, 25, 37, and 38 have been amended. Claims 4 and 20 have been canceled. Support for amendments is found, at least, in the canceled claims and paragraph [0091] of the published application. No new matter has been added.

With respect to any claim amendments and/or cancellations made herein, Applicant has not dedicated to the public or abandoned any unclaimed subject matter. Any amendments and/or cancellations have been made only in the interest of progressing the prosecution of this application and do not indicate that any amendments and/or cancellations are necessary for patentability. Moreover, Applicant has not acquiesced to any rejections and/or objections made by the Patent Office. Applicant reserves the right to pursue prosecution of any presently excluded claim embodiments in a future continuation and/or divisional application.

Claim 1 has been objected to because of an informality. Claim 1 has been amended as requested by the Examiner. Accordingly, Applicant respectfully requests that the objection be withdrawn.

Claims 1, 3-5, 7-16 and 36-38 are rejected under 35 USC 112(b) as being indefinite. The Examiner asserts that claim 1 is indefinite because there is a gap between elements added in Applicant's previous amendment. Claim 1 has been amended to address the Examiner's concerns. The Examiner asserts that claims 37 and 38 are indefinite for lack of antecedent basis for wall sections. To address the Examiner's concern, these claims have been amended to recite "section(s) of the wall." Accordingly, Applicant requests that this rejection be withdrawn

Claims 1, 3-5, 7-8, 11-13, 15-16, and 36-38 are rejected under 35 USC 102(a)(1) on McDougall (US 5,212,366). This rejection is respectfully traversed.



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As amended, claim 1 recites, *inter alia*, an outlet in a cylindrical second portion of the attachment that "is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion." McDougall fails to disclose or suggest this feature.

The Examiner states in the Action that "the fact that McDougall discloses air being emitted from the outlet through the wall means that air will be 'around the external surface of the wall' during use and that air will be 'along the external surface of the wall' during use, meaning the device meets the claim limitations." (Action at 9.) Thus, the Examiner carves up the phrase "along and around the external surface" into two distinct phrases that do not appear in the claim—"along the external surface of the wall" and "around the external surface of the wall"—in order to try and read the claims onto the McDougall reference. Though this is improper, claim 1 has been amended, as noted above, to recite that the outlet "is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion." This amendment clarifies that the outlet is configured not merely to emit air "around the external surface of the wall" and "along the external surface of the wall," but rather, to direct flow tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion." McDougall fails to disclose or suggest an outlet as required by amended claim 1.



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McDougall discloses a hair curling appliance that has a cylindrical barrel that directs air flow radially outward to dry the hair. Hair is curled in the conventional manner by twisting the curler as the teeth that project from the barrel grab the hair. Thus, McDougall only teaches air flow to dry the hair as the hair is being curled in the conventional manner. There is no disclosure or suggestion that the outlet "is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion," as recited in amended claim 1.

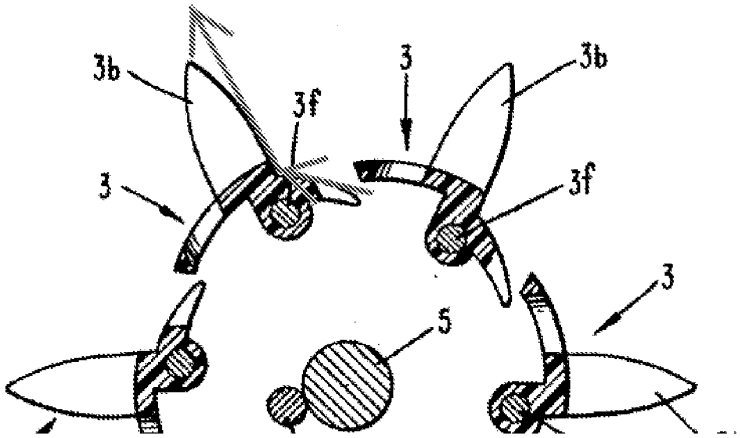
As explained in Applicant's previous response of October 29, 2018, the barrel of McDougall is composed of several elongate barrel elements in a parallel radial arrangement which can be moved to expand or contract the diameter of the barrel. McDougall explains that "the barrel elements mutually combin[e] to form a substantially closed barrel when in the fully expanded state and a substantially closed barrel with overlapping barrel elements in the contracted state." (McDougall, column 2, lines 11-14.) McDougall illustrates the fully expanded state in FIG. 5a, which "shows the barrel 2 in the fully expanded state with gaps between the bases 3a, these gaps being closed by the lateral projections 3c. Closure of the gaps ensures that the barrel 2 is substantially closed so that warm air flowing down the barrel escapes only through the apertures 3d . . . and also through the indentations 3e." (McDougall, column 3, lines 1-16.) McDougall's device is designed, therefore, such that in the expanded state of FIG. 5a the gaps between bases 3a are closed by lateral projections 3c so that the barrel is substantially closed and air flows outward only through the apertures 3d and the indentations 3e.



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Thus, McDougall discloses that the gaps between bases 3a are not configured to direct any fluid flow at all. Instead, only the apertures 3d and the indentations 3e are configured to direct fluid flow, and they are configured to direct fluid flow radially outward. McDougall teaches that air flow extends outwardly through apertures 3d and the indentations 3e. There is no disclosure or suggestion that the apertures 3d or the indentations 3e "configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion," as required by amended claim 1. To the contrary, these openings would direct air flow radially outward.

Moreover, should any airflow escape through gaps between bases 3a, such airflow would not flow "tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion," as required by amended claim 1. In the areas of the indentations 3e, airflow would simply flow radially outward, since there is no feature to direct the airflow in any other way. In the areas outside from the indentations 3e, any airflow that may flow along projections 3c, would immediately encounter a radially extending wall that would turn the airflow radially outward, as illustrated in the annotated excerpt of FIG. 5a below.




As illustrated above, any airflow flowing in the gaps between bases 3a would be directed radially outward; it would not flow "along and around the external surface of the-wall," are required by claim 1. Thus, airflow exiting the outlet in McDougall's device, whether through the apertures 3d, the indentations 3e, or the gaps between bases 3a would be directed radially outward; it would not flow "tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion," as required by amended claim 1. The Examiner states in the Action, that Applicant does not provide any factual evidence of how fluid flow emitted from McDougall's appliance would flow. This is incorrect, since the factual evidence is in McDougall itself as show in the annotated excerpt of FIG. 5a above.

The Examiner argues that in McDougall, "hair wrapped around the device in use would act as a baffle, helping to force the airflow to be 'directed along and around the external surface of the attachment." (Action at 5.) Whether this hypothetical baffling effect would produce the effect asserted by the Examiner or not is irrelevant, however, because claim 1 requires *the outlet to be*



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*configured* such as to "direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion." McDougall's outlet is not configured in this way. Instead, McDougall's outlet is configured to direct airflow radially outward, as explained above. There is no outlet in McDougall's device that would direct airflow in any direction other than radially outward.

Claims 1, 3-5, 7-16, and 36-38 are rejected under 35 USC 102(a)(2) on Doran (US 2016/0000201). However, Doran is not prior art since its effective filing date is not before the effective filing date of the present application. The effective filing date of Doran is July 3, 2014, through its claim of priority to United Kingdom Application No. 1411929.1. The effective filing date of the present application is March 20, 2014, through the claim of priority to United Kingdom Application Nos. 1404982.9, and 1404985.2. Therefore, Doran's effective filing date is after the effective filing date of the present application. Accordingly, Doran is not prior art and this rejection should be withdrawn.

In view of the above, early action allowing claims 1, 3, 5, 7-17, 19, 21, and 23-38 is solicited.



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In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief, including extensions of time, and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. **42466-20933.00**. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: April 15, 2019

Respectfully submitted,

Electronic signature: /christopher gloria/
Christopher Gloria
Registration No.: 71,907
MORRISON & FOERSTER LLP
1650 Tysons Blvd, Suite 400
McLean, Virginia 22102
(703) 760-7389

va-534424

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 14656357 |
| **Filing Date:** | 12-Mar-2015 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Filer:** | Christopher Elmose Gloria/Donna Bernecker |
| **Attorney Docket Number:** | 424662093300 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| Extension - 1 month with $0 paid | 1251 | 1 | 200 | 200 |
| **Miscellaneous:** | | | | |
| | | **Total in USD ($)** | | **200** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 35730090 |
| **Application Number:** | 14656357 |
| **International Application Number:** | |
| **Confirmation Number:** | 9085 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Customer Number:** | 25227 |
| **Filer:** | Christopher Elmose Gloria/Donna Bernecker |
| **Filer Authorized By:** | Christopher Elmose Gloria |
| **Attorney Docket Number:** | 424662093300 |
| **Receipt Date:** | 15-APR-2019 |
| **Filing Date:** | 12-MAR-2015 |
| **Time Stamp:** | 17:08:32 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $200 |
| RAM confirmation Number | 041619INTEFSW00004431031952 |
| Deposit Account | |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | Amend_424662093300.pdf | 74405<br>496e28e49b1bd73d03abbd44bac458b876837a14 | yes | 13 |
| | **Multipart Description/PDF files in .zip description** | | | | |
| | **Document Description** | | **Start** | **End** | |
| | Amendment/Req. Reconsideration-After Non-Final Reject | | 1 | 1 | |
| | Claims | | 2 | 6 | |
| | Applicant Arguments/Remarks Made in an Amendment | | 7 | 13 | |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Fee Worksheet (SB06) | fee-info.pdf | 30536<br>23e9ece7f3e4181bdaa694cc212455199110f39a | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 104941 | | |

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**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>14/656,357 | Filing Date<br>03/12/2015 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY:** ☑ LARGE ☐ SMALL ☐ MICRO

## APPLICATION AS FILED - PART I

| FOR | (Column 1)<br>NUMBER FILED | (Column 2)<br>NUMBER EXTRA | | RATE ($) | FEE ($) |
|---|---|---|---|---|---|
| ☐ BASIC FEE<br>(37 CFR 1.16(a), (b), or (c)) | N/A | N/A | | N/A | |
| ☐ SEARCH FEE<br>(37 CFR 1.16(k), (i), or (m)) | N/A | N/A | | N/A | |
| ☐ EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q)) | N/A | N/A | | N/A | |
| TOTAL CLAIMS<br>(37 CFR 1.16(i)) | minus 20 = | * | | x $80 = | |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h)) | minus 3 = | * | | x $420 = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | | TOTAL | |

## APPLICATION AS AMENDED - PART II

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | 04/15/2019 | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * 32 | Minus | ** 36 | = 0 | | x $100 = | 0 |
| | Independent<br>(37 CFR 1.16(h)) | * 2 | Minus | *** 3 | = 0 | | x $460 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | 0 |

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * | Minus | ** | = | | x $0 = | |
| | Independent<br>(37 CFR 1.16(h)) | * | Minus | *** | = | | x $0 = | |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | |

| | |
|---|---|
| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. | LIE |
| ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". | /CHERYL A CLARK/ |
| *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". | |
| The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1. | |

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 14656357 |
| Filing Date | 2015-03-12 |
| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
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| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

| | | | |
|---|---|---|---|
| | 1 | MacLaine et al., U.S. Office Action mailed December 14, 2018, directed to U.S. Application No. 14/656,432; 14 pages | |

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**EXAMINER SIGNATURE**

| Examiner Signature | | Date Considered | |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /christopher gloria/ | Date (YYYY-MM-DD) | 2019-04-25 |
|---|---|---|---|
| Name/Print | Christopher Gloria | Registration Number | 71907 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 14656357 |
| **Filing Date:** | 12-Mar-2015 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Filer:** | Christopher Elmose Gloria/Donna Bernecker |
| **Attorney Docket Number:** | 424662093300 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| SUBMISSION- INFORMATION DISCLOSURE STMT | 1806 | 1 | 240 | 240 |
| | | **Total in USD ($)** | | **240** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 35829106 |
| **Application Number:** | 14656357 |
| **International Application Number:** | |
| **Confirmation Number:** | 9085 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Customer Number:** | 25227 |
| **Filer:** | Christopher Elmose Gloria/Donna Bernecker |
| **Filer Authorized By:** | Christopher Elmose Gloria |
| **Attorney Docket Number:** | 424662093300 |
| **Receipt Date:** | 25-APR-2019 |
| **Filing Date:** | 12-MAR-2015 |
| **Time Stamp:** | 15:19:21 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $240 |
| RAM confirmation Number | 042619INTEFSW00001800031952 |
| Deposit Account | |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Information Disclosure Statement (IDS) Form (SB08) | SB08_424662093300.PDF | 1050747<br>beeae3abf71550d63d30c530236ff7e80b881c51 | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems. | | | | | |
| 2 | Non Patent Literature | 14656432_2093400_12-14-2018.pdf | 1436095<br>cb7c1950a1d6c4cce7a9b83ea9aa97ccd04f21bf | no | 14 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Fee Worksheet (SB06) | fee-info.pdf | 30526<br>93b718261d4bc44475d22a79e2f2be66bf33e909 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 2517368 | | |

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**New International Application Filed with the USPTO as a Receiving Office**

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 14656357 |
| Filing Date | 2015-03-12 |
| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

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| | 1 | 4250902 | | 1981-02-17 | Ihara | |
| | 2 | 6377749 | B2 | 2002-04-23 | Ohmura | |

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| | 1 | 668043 | DE | | 1933-01-13 | Pehmoeller | Partial Translation | X |

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|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

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|---|---|---|---|
| | 1 | Heffer et al, U.S. Office Action mailed May 14, 2019, directed to U.S. Application No. 15/468,487; 13 pages | |
| | 2 | Heffer et al., U.S. Office Action mailed May 15, 2019, directed to U.S. Application No. 15/468,500; 20 pages | |
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|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

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| Signature | /christopher gloria/ | Date (YYYY-MM-DD) | 2019-05-29 |
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| Name/Print | Christopher Gloria | Registration Number | 71907 |

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## DESCRIPTION DE568043

The invention relates to a particular for hair care hot air shower, wherein the air flow passage is arranged adjustable. In the known such showers the regulation of the air flow passage is disadvantageous, as a sudden congestion of the air flow is caused by the use of rotary valves and calottes and throttle, the one

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Die Erfindung betrifft eine besonders für die Haarpflege bestimmte Heißluftdusche, bei welcher der Luftstromdurchlaß regelbar eingerichtet ist. Bei den bekannten derartigen Duschen ist die Regelung des Luftstromdurchlasses insofern nachteilig, als durch die Verwendung von Drehschiebern und Kalotten sowie Drosselklappen eine plötzliche Stauung des Luftstromes veranlaßt wird, die einen

"O has a detrimental influence on the warming of the same. This disadvantage is according to the invention solved by the fact that at the same time with the regulation of the air flow passage leading to the passage opening channel

---

«o nachteiligen Einfluß auf die Erwärmung desselben hat. Dieser Nachteil wird der Erfindung gemäß dadurch behoben, daß zugleich mit der Regelung des Luftstromdurchlasses der zu der Durchlaßöffnung führende Kanal

> 5 regulated, so a gradually narrowing channel is formed. Making use of the known iris shutter for the regulation of the air flow passage, the essence of the invention is that

---

>5 geregelt, also ein sich allmählich verengender Kanal gebildet wird. Unter Nutzbarmachung des an sich bekannten Irisblendenverschlusses für die Regelung des Luftstromdurchlasses besteht das Wesen der Erfindung darin, daß

"& Ogr; the iris shutter forming sectors with each other shingled cross-over, a tubular channel including guide plates are connected, which are pivotally mounted in joints, so that constricted with the setting of the iris shutter leading to this tubular channel or can be widened. As a result, the progress is achieved that in the leading to the iris shutter tubular channel no air congestion can enter behind the iris shutter. Rather, the heated air stream is gradually compressed on the way to the iris shutter and exits the nozzle as the core jet at the desired pressure.

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«&ogr; die den Irisblendenverschluß bildenden Sektoren mit einander schuppenförmig übergreifenden, einen rohrförmigen Kanal einschließenden Führungsblechen in Verbindung stehen, die in Gelenken schwenkbar gelagert sind, so daß mit der Einstellung des Irisblendenverschlusses der zu diesem führende rohrförmige Kanal konisch verengt oder erweitert werden kann. Hierdurch wird der Fortschritt erzielt, daß in dem zu dem Irisblendenverschluß führenden rohrförmigen Kanal keine Luftstauungen hinter dem Irisblendenverschluß eintreten können. Der erhitzte Luftstrom wird vielmehr auf dem Wege zum Irisblendenverschluß allmählich zusammengedrängt und tritt als Kernstrahl mit dem gewünschten Druck aus der Düse aus.

In the drawing, the subject invention is shown in an embodiment, and indeed shows

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In der Zeichnung ist der Erfindungsgegenstand in einem Ausführungsbeispiel dargestellt, und zwar zeigt

Fig. & Igr; a hot air shower controllably arranged for the air flow passage according to the invention,

---

Abb. &igr; eine für den Luftstromdurchlaß gemäß der Erfindung regelbar eingerichtete Heißluftdusche,

Fig. 2, the nozzle of the hot air shower arranged for the regulation of the air passage in longitudinal section, partly in view.

---

Abb. 2 die für die Regelung des Luftdurchlasses eingerichtete Düse der Heißluftdusche im Längsschnitt, zum Teil in Ansicht.

Fig. 3 is an end view of the nozzle of Fig. 1, with the left half of the figure showing the iris shutter and the duct leading to the mouth set at the smallest flow area, while the right half illustrates the



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setting at the largest flow area.

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Abb. 3 ist eine Endansicht der Düse nach der Abb. 1, und zwar zeigt die linke Hälfte der Abbildung den Irisverschluß und den zur Mündung führenden Kanal auf kleinsten Durchlaßquerschnitt eingestellt, während die rechte Hälfte die Einstellung bei größtem Durchlaßquerschnitt veranschaulicht.

The provided with handle 11 and a plug connection line 12 and axially to the fan with air inlet openings housing 10 has in a known manner the tangential air outlet nozzle 13, in which a simultaneously powered with the electric motor with electric radiator is interchangeable installed, so that through the air outlet 13th driven air experiences the desired warming.

---

Das mit Handgriff 11 und einer Steckeranschlußleitung 12 sowie axial zu dem Gebläse mit Lufteintrittsöffnungen versehene Gehäuse 10 hat in bekannter Weise den tangentialen Luftaustrittsstutzen 13, in dem ein zugleich mit dem Elektromotor mit Strom gespeister elektrischer Heizkörper auswechselbar eingebaut ist, so daß die durch den Luftaustrittsstutzen 13 getriebene Luft die gewünschte Erwärmung erfährt.

With the air outlet nozzle 13, a nozzle 14 is connected, the mouth of which determines the passage cross-section. To control the passage cross-section of the known per se iris shutter is used. The forming the iris shutter sectors 19, which are inevitably interconnected in a conventional manner, so that they can be adjusted together to the required flow cross-section, according to the invention with each other dandruff cross and in the manner shown in Fig. 3 way a tubular channel enclosing Guide plates 20 in connection, which are pivotally mounted in joints 21 on the outer edge of the nozzle 14. From the upper half of Fig. 2 it can be seen how, by the pivoting of the guide plates 20 of the leading to the iris shutter 19 tubular channel can be conically narrowed or extended.

---

Mit dem Luftaustrittsstutzen 13 ist eine Düse 14 verbunden, deren Mündung den Durchlaßquerschnitt bestimmt. Zur Regelung des Durchlaßquerschnittes wird der an sich bekannte Irisblendenverschluß verwendet. Die den Irisblendenverschluß bildenden Sektoren 19, die in an sich bekannter Weise zwangsläufig miteinander verbunden sind, so daß sie gemeinsam auf den verlangten Durchlaßquerschnitt eingestellt werden können, stehen erfindungsgemäß mit einander schuppenförmig übergreifenden und in der aus der Abb. 3 ersichtlichen Art einen rohrförmigen Kanal einschließenden Führungsblechen 20 in Verbindung, die in Gelenken 21 am Außenrand der Düse 14 schwenkbar gelagert sind. Aus der oberen Hälfte der Abb. 2 ist ersichtlich, wie durch die Verschwenkung der Führungsbleche 20 der zu dem Irisverschluß 19 führende rohrförmige Kanal konisch verengt oder erweitert werden kann.



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Of course, with respect to the illustrative example of the drawing, variations in the design and dimensional proportions of the individual parts of the hot air shower may be made as desired or desired without departing from the scope of the invention. <9t >>

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Es können natürlich gegenüber dem Darstellungsbeispiel der Zeichnung Abänderungen in der Ausführung und in den Maßverhältnissen der einzelnen Teile der Heißluftdusche nach Wunsch oder Bedarf vorgenommen werden, ohne den Rahmen der Erfindung zu überschreiten. <9t>>



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Page 1776 of 1998

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# PATENTSCHRIFT

№ 568043

KLASSE 33c GRUPPE 6/17

*P 62412 X/33c*

*Tag der Bekanntmachung über die Erteilung des Patents: 29. Dezember 1932*

Ludwig Pehmöller in Hamburg

## Heißluftdusche

Film



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Page 1777 of 1998

Zu der Patentschrift 568 043
Kl. 33 c Gr. 6 10

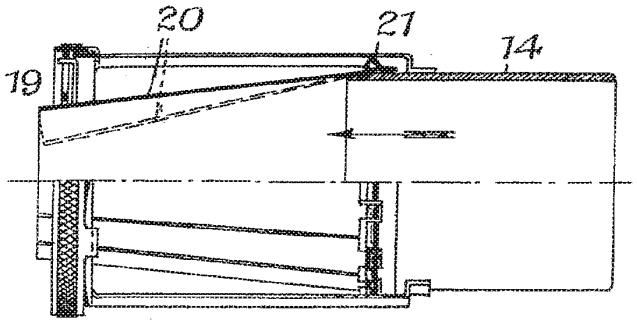



Abb. 2.

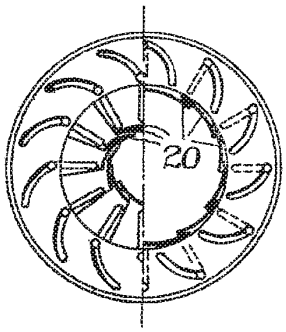



Abb. 3.

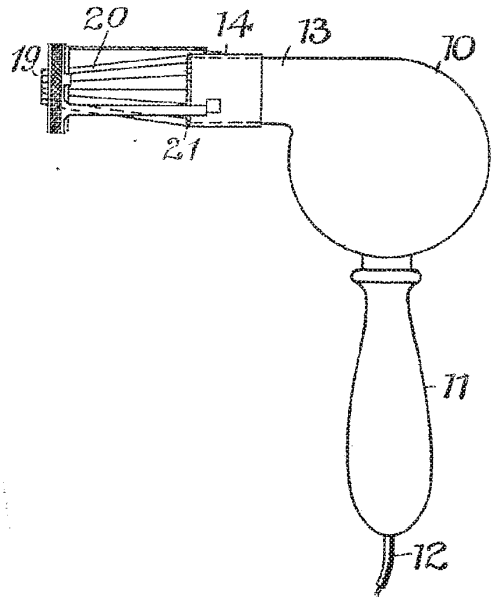



Abb. 1.



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# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 14656357 |
| **Filing Date:** | 12-Mar-2015 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Filer:** | Christopher Elmose Gloria/Donna Bernecker |
| **Attorney Docket Number:** | 424662093300 |

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| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

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| **EFS ID:** | 36145345 |
| **Application Number:** | 14656357 |
| **International Application Number:** | |
| **Confirmation Number:** | 9085 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Customer Number:** | 25227 |
| **Filer:** | Christopher Elmose Gloria/Donna Bernecker |
| **Filer Authorized By:** | Christopher Elmose Gloria |
| **Attorney Docket Number:** | 424662093300 |
| **Receipt Date:** | 29-MAY-2019 |
| **Filing Date:** | 12-MAR-2015 |
| **Time Stamp:** | 16:28:59 |
| **Application Type:** | Utility under 35 USC 111(a) |

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| 1 | Information Disclosure Statement (IDS) Form (SB08) | SB08_424662093300.PDF | 1051442<br>8d70eacf6d66c8fd30d175461b38308d92d b7cea | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Foreign Reference | DE_568043.pdf | 518513<br>0bac347d95d6f9ba80a39770b0ca3719239 25e5e | no | 6 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Non Patent Literature | 15468487_2111100_05-14-2019.pdf | 1183884<br>478d9d1e1cc7cbe630fd66d52b90b824129 bac24 | no | 13 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Non Patent Literature | 15468500_2111700_05-15-2019.pdf | 1955681<br>18815bd7e2a441fc6730ebee0de524ca357f b003 | no | 20 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | Non Patent Literature | 15468502_2111900_05-23-2019.pdf | 2140444<br>0c2f46207300afde9a424ec6546e0629642e 8bcb | no | 22 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 6 | Fee Worksheet (SB06) | fee-info.pdf | 30526<br>714c6dfcfdce5291f5352275fd27f0510385f 4f0 | no | 2 |
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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 14/656,357 | 03/12/2015 | Alasdair Michael MACLAINE | 424662093300 | 9085 |

25227 7590 09/18/2019

MORRISON & FOERSTER LLP
1650 TYSONS BOULEVARD
SUITE 400
MCLEAN, VA 22102

| EXAMINER | |
|---|---|
| GILL, JENNIFER FRANCES | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3772 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 09/18/2019 | ELECTRONIC |

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PatentDocket@mofo.com
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| *Office Action Summary* | **Application No.** 14/656,357 | **Applicant(s)** MACLAINE, Alasdair Michael | |
|---|---|---|---|
| | **Examiner** JENNIFER F GILL | **Art Unit** 3772 | **AIA (FITF) Status** Yes |

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☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims***

5) ☑ Claim(s) 1,3,5,7-17,19,21 and 23-38 is/are pending in the application.

5a) Of the above claim(s) 17,19,21 and 23-35 is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1,3,5,7-16 and 36-38 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

**Application Papers**

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 4/15/19 & 5/29/19.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

## DETAILED ACTION

### *Notice of Pre-AIA or AIA Status*

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

### *Information Disclosure Statement*

The information disclosure statement(s) (IDS) submitted on 4/25/19 & 5/29/19 was/were filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement(s) has/have been considered by the examiner.

### *Claim Objections*

**Claims 5 and 14** is/are objected to because of the following informalities:

**Claim 5**, replace "the surface" with --the external surface-- to avoid antecedent issues.

**Claim 14**, replace "the elongate material is a wire" with --wherein the perforated layer is formed from a mesh or a weave of elongate wire-- to avoid improper dependency for not including the mesh limitation of claim 13 in claim 14.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 1, 3, 5, 7-16, and 36-38 is/are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to**

**particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.**

**Claim 1** recites "an inlet in a proximal portion of the attachment", "an outlet in a cylindrical second portion of the attachment", but it is unclear why there is a "a cylindrical ***second*** portion" when no "first portion" in the claim. For examination purposes, the claim will be treated as reciting "an inlet at a proximal first portion of the attachment". Clarification or correction is requested.

**Claim 38** recites "a first section of the wall…a second section of the wall" without structurally link these "first and second sections" to the "adjacent sections of the wall" set forth in claim 37. Clarification or correction is requested.

***Claim Rejections - 35 USC § 102***

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

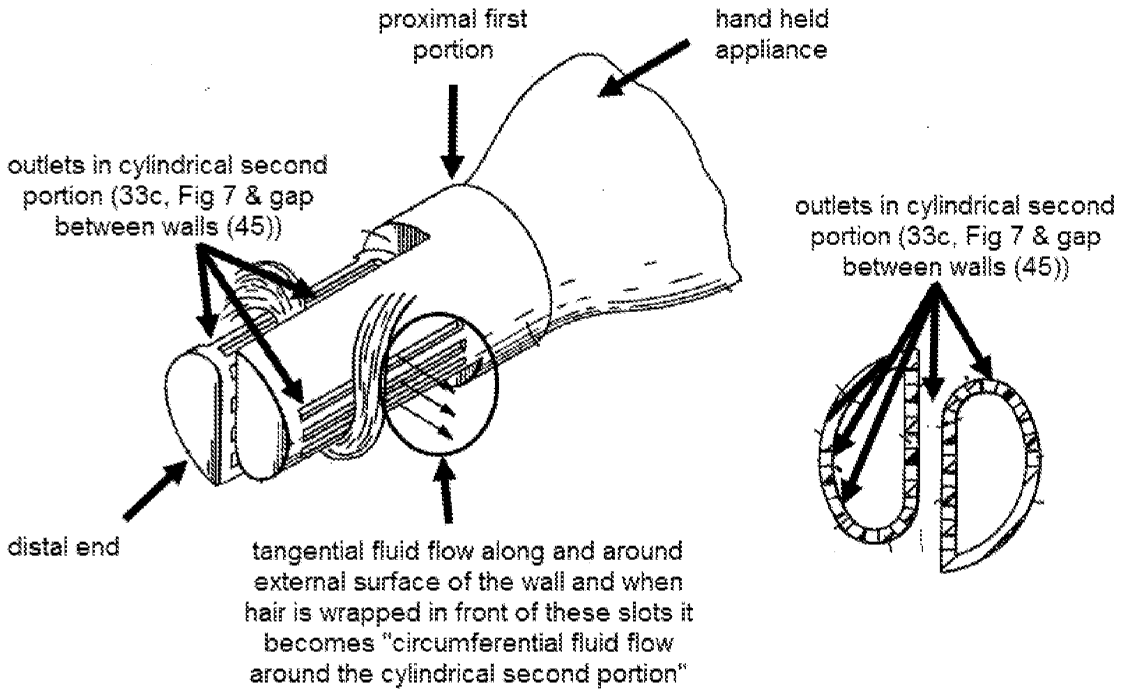
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

**Claim(s) 1, 3, 5, 7-8, and 36 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Glassman (US 4214597).**

**Claims 1, 3, 5, and 7**, Glassman teaches an attachment (12c, see Fig 6) for a handheld appliance (49; Col 4, 45-50) comprising an inlet (interior of 12c) in a first proximal portion of the attachment; an outlet (33c) in a cylindrical second portion of the attachment (see Figs 6-7 & annotations); and a fluid flow path (Col 4, 45-50) between the inlet and the outlet (see Fig 6-7 & annotations), wherein the outlets in the cylindrical second portion comprise a plurality of slots (33c & the gap between the walls (45, Fig 7)) radially spaced around the attachment (see Figs 6-7 & annotations) and these slots extend towards a distal end of the attachment (see Figs 6-7 & annotations). The outlet is at least partially defined by an external surface of a wall of the attachment (see annotations) and is configured to direct fluid flow emitted from the outlets tangentially along and around the external surface of the wall (see annotations) and with hair wrapped around the device this results in forming a circumferential fluid flow around the cylindrical second portion of the attachment and according to applicant this fluid flow "encourages hair to automatically wrap around" the cylindrical second portion and causes "the fluid emitted from the outlet to be attracted to the surface of the attachment" (see annotations). The external surface of the wall(s) form an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot (see annotations).

**Claim 8**, Glassman teaches the invention of claim 1 and further teaches the attachment has a longitudinal axis and the slots extend parallel to this longitudinal axis (see annotations).




**Claim 36**, Glassman teaches the invention of claim 1 and teaches the wall comprising a plurality of plates because each solid piece between the slots in Figure 6 constitutes a plate (see annotations).

***Claim Rejections - 35 USC § 103***

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have

> been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 3, 5, 7, 9-16, and 36-38 is/are rejected under 35 U.S.C. 103 as being unpatentable/obvious over Speetjens (US 1504988) in view of Glassman (US 4214597).**

**Claims 1, 3, 5, 7 and 9-10**, Speetjens teaches an attachment, or curler (see Fig 1) comprising an inlet (c & c' opening in base (see Fig 3)) in a proximal portion (c & c')of the attachment; an outlet in the form of a plurality of helical slots (g, see Fig 1 & annotations) formed in a cylindrical second portion of the attachment (see Fig 1); and a fluid flow path between the inlet and the outlet (since air is capable of flowing in this region it is "fluid flow path"; see Figs 1-4). The plurality of slots extend towards a distal end of the attachment while being radially spaced around the attachment (see Fig 1) and the outlet is at least partially defined by an external surface of a wall (f) of the attachment and the external surface of the wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot (g) to an end of the at least one slot.

Speetjens discloses the invention essentially as claimed except for the attachment being attached to a handheld appliance with a source of fluid flow so that fluid is emitted tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion.

Glassman, however, teaches an attachment (10c & 10d) that can be used independently as a hair curler (see Fig 8) or which can be used as an attachment to a handheld appliance (49) carrying a source of heated air (Col 4, 32-37) and air is a fluid (see Fig 6). Glassman teaches that it is an obvious matter of design choice to directly

heat a hair curler and use it independently of a source of hot air or to use the curler in conjunction with a source of hot air, which would allow air to flow through the curler, or attachment and further teaches that providing a source of fluid flow with a heated curler is beneficial because it combines the effects of curling and drying at the same time (Col 4, 45-49). Therefore, it would have been obvious to one possessing ordinary skill in the art at the time of filing to modify the device of Speetjens by providing the curler attachment of Speetjens with a source of fluid flow in the form of a handheld appliance, as taught by Glassman to be advantageous by allowing a user to curl and dry their hair simultaneously. The proposed modification is to provide the curler attachment of Speetjens with a source of fluid in the form of air at the inlet in order to allow a user to curl and dry the hair simultaneously. With a source of air moving over the heater of Speetjens, the fluid would be emitted from the plurality of slots tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment thereby encouraging hair to “automatically” wrap around the cylindrical second portion because according to the claims all that is required structurally for this function is at least one slot and the device of Speetjens has at least one slot. Furthermore, with the proposed modification, heated air, or fluid, would exit from the helical slots tangentially and when hair is wrapped around the external surface of the attachment (how the curler is used) then this would result in the hair causing the fluid to flow around the cylindrical second portion of the attachment and along and around the external surface of the wall thereby “attracting” the fluid emitted from the outlets to the external surface of the attachment as claimed.

**Claims 11-12**, Speetjens in view of Glassman teaches the invention of claim 1 and Speetjens also teaches the attachment further comprising a flow directing element (h) between the inlet and the outlet and this flow directing element is a tubular sleeve perforated with a series of matching helical slots (g, see Figs 1-2). Since the proposed modification is to provide the attachment of Speetjens with a series of air flow without changing the structure of the attachment, so Speetjens in view of Glassman also teaches these limitations.

**Claims 13-14**, Speetjens in view of Glassman teaches the invention of claim 12 and Speetjens does specify that the helical slots (g) can take on any form other than slots (Page 1, line 75-80). Speetjens in view of Glassman discloses the invention essentially as claimed except for the perforated layer being formed from a mesh. Glassman, however, teaches that curler attachments can comprise slots (see Fig 6) or a network of holes (33) in combination with a pair of longitudinal slots (see Figs 1-3) thereby forming a perforated mesh type layer since Merriam-Webster defines “mesh” as “a web-like pattern or construction” and the series of holes constitutes a “web-like pattern”. Glassman teaches it an obvious matter of design choice to perforate the walls of the curler attachment thereby forming a mesh type perforated layer. Therefore, it would have been obvious to one possessing ordinary skill in the art at the time of filing to modify the device of Speetjens in view of Glassman by providing the curler walls with a “web-like” pattern of holes in addition to the slots, since it has been held that combining two embodiments disclosed adjacent to each other in a prior art patent does not require a leap of inventiveness and involves only routine skill in the art. The proposed modification is to provide the wall (f) and flow directing element (h) with a

series of spaced apart holes as taught by Glassman to be another option of slot configuration or shape, which would result in the attachment of Speetjens having the slots and a series of holes forming a mesh in both the wall (f) and the flow directing element (h, see Figs 1-2).

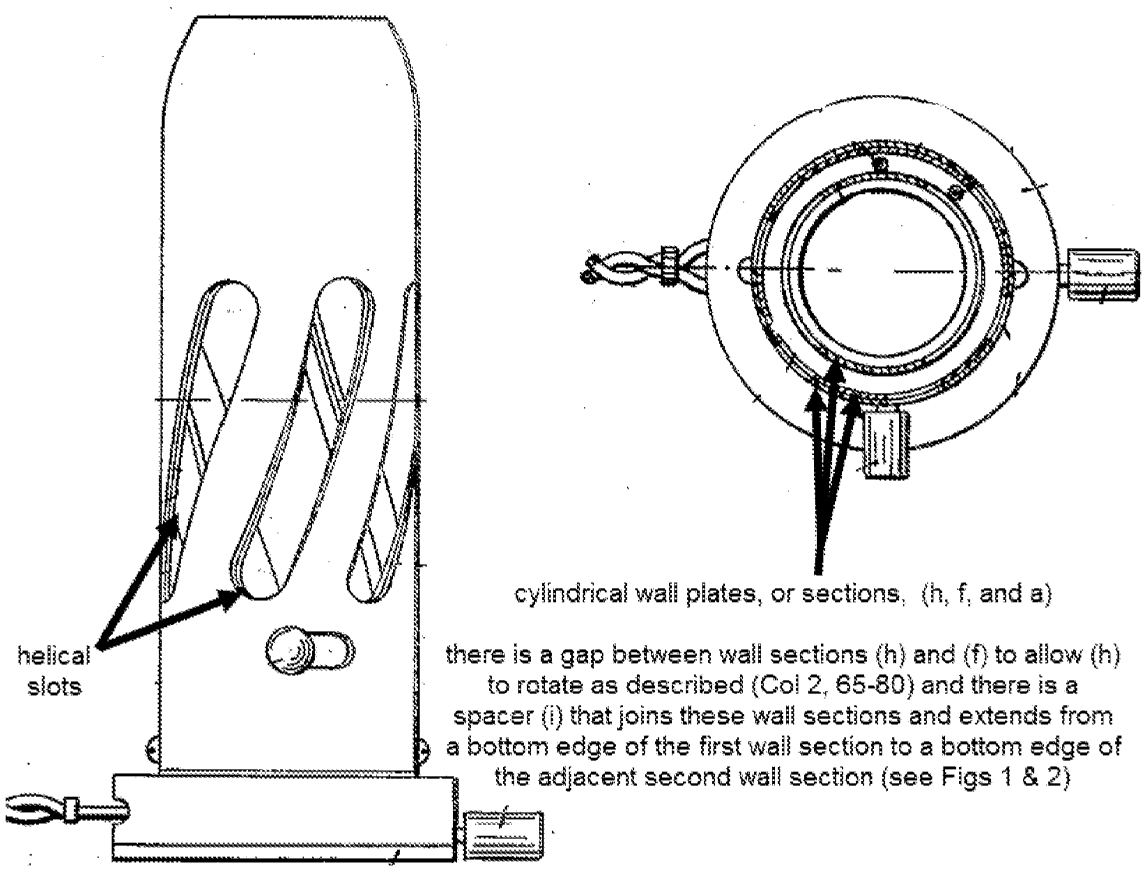
**Claim 15**, Speetjens in view of Glassman teaches the invention of claim 12 and Speetjens also teaches the flow directing element (h) extends substantially along a length of the at least one slot (g, see Figs 1-2). Since the proposed modification is to provide the attachment of Speetjens with a series of air flow without changing the structure of the attachment, so Speetjens in view of Glassman also teaches these limitations.

**Claim 16**, Speetjens in view of Glassman teaches the invention of claim 12 and Speetjens also teaches the flow directing element (h) extends substantially around an inner circumference of the attachment (see Fig 2). Since the proposed modification is to provide the attachment of Speetjens with a series of air flow without changing the structure of the attachment, so Speetjens in view of Glassman also teaches these limitations.

**Claim 36**, Speetjens in view of Glassman teaches the invention of claim 1 and Speetjens also teaches the wall comprising a plurality of plates (f & h, see Figs 1-2). Since the proposed modification is to provide the attachment of Speetjens with a series of air flow without changing the structure of the attachment, so Speetjens in view of Glassman also teaches these limitations.

**Claims 37-38**, Speetjens in view of Glassman teaches the invention of claim 1 and Speetjens also teaches the at least one slot being formed by a gap between edges

of adjacent first and second wall sections (f & h) that are joined by a spacer (i) disposed between the beginning of the at least one slot and the end of the at least one slot to maintain the gap between the two wall sections (see Figs 1-2).




***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Gill whose telephone number is (571)270-17971797. The examiner can normally be reached on Monday-Thursday 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, ***please contact the examiner's supervisor, Cris Rodriguez, at* (571) 272-4964**. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

***If there are any inquiries that are not being addressed by first contacting the Examiner or the Supervisor, you may send an email inquiry to*** TC3700_Workgroup_D_Inquiries@uspto.gov***.***

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JENNIFER GILL/
Examiner, Art Unit 3772
/YOGESH P PATEL/
Primary Examiner, Art Unit 3772

| Notice of References Cited | Application/Control No. 14/656,357 | Applicant(s)/Patent Under Reexamination MACLAINE, Alasdair Michael | |
|---|---|---|---|
| | Examiner JENNIFER F GILL | Art Unit 3772 | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | CPC Classification | US Classification |
|---|---|---|---|---|---|---|
| * | A | US-4214597-A | 07-1980 | Glassman; Geraldine | A45D2/36 | 132/223 |
| * | B | US-3107675-A | 10-1963 | EMBIRICOS NICOLE J | A45D6/06 | 132/229 |
| * | C | US-1504988-A | 08-1924 | Speetjens | A45D4/06 | 219/226 |
| | D | | | | | |
| | E | | | | | |
| | F | | | | | |
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**FOREIGN PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Country | Name | CPC Classification |
|---|---|---|---|---|---|---|
| | N | | | | | |
| | O | | | | | |
| | P | | | | | |
| | Q | | | | | |
| | R | | | | | |
| | S | | | | | |
| | T | | | | | |

**NON-PATENT DOCUMENTS**

| * | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|---|
| | U | |
| | V | |
| | W | |
| | X | |

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 14/656,357 | MACLAINE, Alasdair Michael |
| | Examiner | Art Unit |
| | JENNIFER F GILL | 3772 |

| CPC - Searched* | | |
|---|---|---|
| **Symbol** | **Date** | **Examiner** |
| A45D 1/02, 2/06, 2/10, 2/125, 2/127, 2/14, 2/24, 2/2407, 2/2414, 2/2421, 2/245, 2/2457, 2/2485, 2/2492, 20/10, 20/122, 20/124, 20/50 | 1/25-2/3/17 | JG |
| A46B 9/023, 15/003 | 1/25-2/3/17 | JG |

| CPC Combination Sets - Searched* | | |
|---|---|---|
| **Symbol** | **Date** | **Examiner** |
| | | |

| US Classification - Searched* | | | |
|---|---|---|---|
| **Class** | **Subclass** | **Date** | **Examiner** |
| | | | |

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

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|---|---|
| | /JENNIFER F GILL/<br>EXAMINER, Art Unit 3772 |



SharkNinja Ex. 1002
Page 1798 of 1998

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 14/656,357 | MACLAINE, Alasdair Michael |
| | Examiner | Art Unit |
| | JENNIFER F GILL | 3772 |

| Search Notes | | |
|---|---|---|
| **Search Notes** | **Date** | **Examiner** |
| 132.CLAS (WITH TEXT SEE EAST HISTORY) | 1/25-2/3/17 | JG |
| USPC SEARCH WITH TEXT | 1/25-2/3/17 | JG |
| CPC SEARCH | 1/25-2/3/17 | JG |
| INVENTOR SEARCH | 1/25-2/3/17 | JG |
| ASSIGNEE SEARCH | 1/25-2/3/17 | JG |
| TEXT SEARCH (SEE EAST HISTORY) | 1/25-2/3/17 | JG |
| NPL SEARCH | 1/25-2/3/17 | JG |
| CONSULT WITH KIM SANG OF USPC 242 | 1/25-2/3/17 | JG |
| A45D 1/02, 2/06, 2/10, 2/125, 2/127, 2/14, 2/24, 2/2407, 2/2414, 2/2421, 2/245, 2/2457, 2/2485, 2/2492, 20/10, 20/122, 20/124, 20/50 | 1/25-2/3/17 | JG |
| A46B 9/023, 15/003 | 1/25-2/3/17 | JG |
| updated search notes | 7/31-8/3/17 | jg |
| updated search notes | 12/29/17-1/2/18 | jg |
| updated search | 7/23-7/29/19 | JG |

| Interference Search | | | |
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| **US Class/CPC Symbol** | **US Subclass/CPC Group** | **Date** | **Examiner** |
| | | | |

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| | /JENNIFER F GILL/<br>EXAMINER, Art Unit 3772 |



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Page 1799 of 1998

PTO/SB/08a (03-15)
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 14656357 |
| Filing Date | 2015-03-12 |
| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
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| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|



All References Considered Except Where Lined Through. /J.F.G/

| Receipt date: 04/25/2019 | Application Number | 14656357 14656357 - GAU: 3772 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** **( Not for submission under 37 CFR 1.99)** | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

| | | | |
|---|---|---|---|
| | 1 | MacLaine et al., U.S. Office Action mailed December 14, 2018, directed to U.S. Application No. 14/656,432; 14 pages | |

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**EXAMINER SIGNATURE**

| Examiner Signature | /JENNIFER F GILL/ | Date Considered | 07/29/2019 |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



All References Considered Except Where Lined Through. /J.F.G/

| Receipt date: 04/25/2019 | Application Number | 14656357 14656357 - GAU: 3772 |
|---|---|---|
| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** **( Not for submission under 37 CFR 1.99)** | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /christopher gloria/ | Date (YYYY-MM-DD) | 2019-04-25 |
|---|---|---|---|
| Name/Print | Christopher Gloria | Registration Number | 71907 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



All References Considered Except Where Lined Through. /J.F.G/

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



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**EAST Search History**

**EAST Search History (Prior Art)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L1 | 702 | a45d1/02.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:51 |
| L2 | 181 | a45d2/06.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:51 |
| L3 | 576 | a45d2/10.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:51 |
| L4 | 258 | a45d2/125.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:51 |
| L5 | 154 | a45d2/127.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:51 |
| L6 | 560 | a45d2/14.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:51 |
| L7 | 659 | a45d2/24.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:52 |
| L8 | 257 | a45d2/2407.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:52 |
| L9 | 49 | a45d2/2414.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:52 |
| L10 | 189 | a45d2/2421.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:52 |
| L11 | 55 | a45d2/245.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:52 |
| L12 | 169 | a45d2/2457.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:52 |
| L13 | 97 | a45d2/2485.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:52 |
| L14 | 51 | a45d2/2492.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:52 |
| L15 | 1912 | a45d20/10.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:52 |
| L16 | 1012 | a45d20/122.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:52 |
| L17 | 290 | a45d20/124.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:52 |
| L18 | 1307 | a45d20/50.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:53 |
| L19 | 1461 | a46b9/023.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:53 |
| L20 | 418 | a46b15/003.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2019/07/29 16:53 |

**EAST Search History (Interference)**

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 14656357 |
| Filing Date | 2015-03-12 |
| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

**U.S.PATENTS** Remove

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| | 1 | 4250902 | | 1981-02-17 | Ihara | |
| | 2 | 6377749 | B2 | 2002-04-23 | Ohmura | |

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|---|---|---|---|---|---|---|---|---|
| | 1 | 568043 | DE | | 1933-01-13 | Pehmoeller | Partial Translation | X |

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| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|
| | 1 | Heffer et al, U.S. Office Action mailed May 14, 2019, directed to U.S. Application No. 15/468,487; 13 pages | |
| | 2 | Heffer et al., U.S. Office Action mailed May 15, 2019, directed to U.S. Application No. 15/468,500; 20 pages | |
| | 3 | Mason et al., U.S. Office Action mailed May 23, 2019, directed to U.S. Application No. 15/468,502; 22 pages | |

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**EXAMINER SIGNATURE**

| Examiner Signature | /JENNIFER F GILL/ | Date Considered | 07/29/2019 |
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

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| Application Number | 14656357 |
| Filing Date | 2015-03-12 |
| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /christopher gloria/ | Date (YYYY-MM-DD) | 2019-05-29 |
| Name/Print | Christopher Gloria | Registration Number | 71907 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

Docket No.: 42466-20933.00

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357

Confirmation No.: 9085

Filed: March 12, 2015

Art Unit: 3772

For: ATTACHMENT FOR A HAND HELD APPLIANCE

Examiner: Jennifer Frances Gill

**AMENDMENT UNDER 37 C.F.R. 1.116**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the final Office Action dated September 18, 2019, the period for response having been extended two months to February 18, 2020, please amend this application as follows.

Amendments to the claims begin on page 2.

Remarks begin on page 6.



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**AMENDMENTS TO THE CLAIMS**

1. (Currently Amended) An attachment for a hand held appliance comprising an inlet in a proximal first portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending towards a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a wall of the attachment and is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion, and wherein the external surface of the wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot.

2. (Canceled)

3. (Original) The attachment of claim 1, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

4. (Canceled)

5. (Currently Amended) The attachment of claim 1, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the external surface of the attachment.

6. (Canceled)

7. (Original) The attachment of claim 1, wherein the outlet comprises two slots.

8. (Previously Presented) The attachment of claim 1, wherein the attachment has a longitudinal axis and the at least one slot is parallel to the longitudinal axis.

9. (Previously Presented) The attachment of claim 1, wherein the attachment has a longitudinal axis and the at least one slot is non-parallel to the longitudinal axis.

10. (Original) The attachment of claim 9, wherein the at least one slot is helical with respect to the longitudinal axis.

11. (Original) The attachment of claim 1, further comprising a flow directing element between the inlet and the outlet.

12. (Original) The attachment of claim 11, wherein the flow directing element comprises a perforated layer.

13. (Original) The attachment of claim 12, wherein the perforated layer is formed from a mesh or weave of an elongate material.

14. (Currently Amended) The attachment of claim 13, wherein the perforated layer is formed from a mesh or a weave of elongate ~~material is a~~ wire.

15. (Previously Presented) The attachment of claim 12, wherein the flow directing element extends substantially along a length of the at least one slot.

16. (Original) The attachment of claim 12, wherein the flow directing element extends substantially around an inner circumference of the attachment.

17. (Withdrawn-Currently Amended) A hand held appliance comprising a handle having a fluid flow path from handle inlet to a handle outlet, a fan unit for drawing fluid into the handle inlet, and an attachment for attaching to the handle, the attachment comprising an inlet in a proximal first portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending towards a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a wall of the attachment and is configured to direct fluid flow emitted from the outlet

tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion, and wherein the external surface of the wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot.

18. (Canceled)

19. (Withdrawn) The appliance of claim 17, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

20. (Canceled)

21. (Withdrawn-Currently Amended) The appliance of claim 17, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the external surface of the attachment.

22. (Canceled)

23. (Withdrawn) The appliance of claim 17, wherein the outlet comprises two slots.

24. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment has a longitudinal axis and the at least one slot is parallel to the longitudinal axis.

25. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment has a longitudinal axis and the at least one slot is non-parallel to the longitudinal axis.

26. (Withdrawn) The appliance of claim 25, wherein the at least one slot is helical with respect to the longitudinal axis.

27. (Withdrawn) The appliance of claim 17, further comprising a flow directing element between the inlet and the outlet.

28. (Withdrawn) The appliance of claim 27, wherein the flow directing element comprises a perforated layer.

29. (Withdrawn) The appliance of claim 28, wherein the perforated layer is formed from a mesh or weave of an elongate material.

30. (Withdrawn-Currently Amended) The appliance of claim 29, wherein the perforated layer is formed from a mesh or a weave of elongate ~~material is a~~ wire.

31. (Withdrawn-Previously Presented) The appliance of claim 27, wherein the flow directing element extends substantially along a length of the at least one slot.

32. (Withdrawn) The appliance of claim 27, wherein the flow directing element extends substantially around an inner circumference of the attachment.

33. (Withdrawn) The appliance of claim 17, wherein the appliance is a hair care appliance.

34. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling appliance.

35. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling brush.

36. (Previously Presented) The appliance of claim 1, wherein the wall comprises a plurality of plates.

37. (Previously Presented) The appliance of claim 1, wherein the at least one slot is formed by a gap between adjacent sections of the wall that are joined by at least one spacer disposed between the beginning of the at least one slot and the end of the at least one slot to maintain the gap.

38. (Currently Amended) The appliance of claim 37, wherein the at least one spacer extends from an edge of a first section of the adjacent sections of the wall to an edge of a second section of the adjacent sections of the wall.

**REMARKS**

Claims 1, 5, 14, 17, 21, 30, and 38 have been amended to address the Examiner's claim clarity concerns. No new matter has been added. To the extent that the prior art rejections are maintained, the amendments should be entered at least because they reduce the number of issues on appeal. (MPEP 2272 II.)

With respect to any claim amendments and/or cancellations made herein, Applicant has not dedicated to the public or abandoned any unclaimed subject matter. Any amendments and/or cancellations have been made only in the interest of progressing the prosecution of this application and do not indicate that any amendments and/or cancellations are necessary for patentability. Moreover, Applicant has not acquiesced to any rejections and/or objections made by the Patent Office. Applicant reserves the right to pursue prosecution of any presently excluded claim embodiments in a future continuation and/or divisional application.

**I. Claim Objection**

Claims 5 and 14 are objected to because of informalities. The claims have been amended as suggested by the Examiner. Accordingly, Applicant respectfully requests that these objections be withdrawn.

**II. 35 U.S.C. 112(b) Rejection**

Claims 1, 3, 5, 7-16, and 36-38 are rejected under 35 U.S.C. 112(b) as being indefinite. To address the Examiner's concerns, claims 1 and 38 have been amended as suggested by the Examiner. Accordingly, Applicant respectfully requests that this rejection be withdrawn.

**III. 35 U.S.C. 102 Rejection**

Claims 1, 3, 5, 7-8, and 36 are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Glassman (US-4,214,597). This rejection is respectfully traversed.

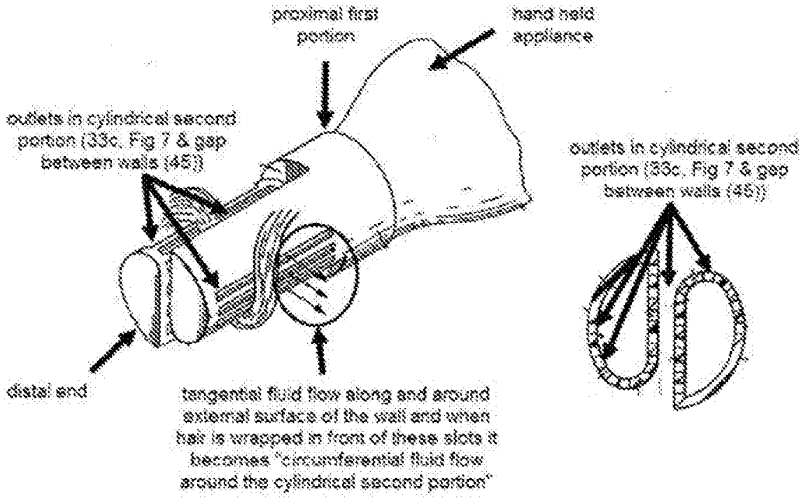


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Claim 1 recites an attachment that has an "outlet [that] . . . is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion."

The Examiner asserts that both Glassman teaches the outlet recited in claim 1. However, as explained further below, Glassman teaches outlets that direct fluid flow radially out of the attachment and require the user to manually wrap hair around the attachment. Glassman fails to disclose or suggest an outlet that "is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion," as recited in claim 1.

Glassman discloses a hair waving device in which hair is positioned in an S shape in the device. The examiner has provided the below annotations of FIG. 6 and 7 to show the mapping applied in the Action.




As illustrated by the arrows that the Examiner circled in the annotation of FIG. 6 of Glassman above, the outlet is configured to direct fluid flow **radially outwardly** from the attachment. This



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is completely different from what is claimed. Claim 1 recites an outlet configured to direct "fluid flow emitted from the outlet **tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment** that encourages hair to automatically wrap around the cylindrical second portion." Glassman's outlet directs flow radially outwardly, not tangentially along an around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion," as required by claim 1. The Examiner's explanation as to how Glassman's outlets allegedly meet the requirements of claim 1 is limited to the Examiner's assertion in the annotation of FIG. 6 of Glassman reproduced above that the radial airflow illustrated in Glassman's FIG. 6 meets the requirements of claim 1. But this assertion does not make sense. Glassman's airflow is clearly radially airflow, not "tangential[] along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment," as recited by claim 1.

Moreover, because Glassman's outlets direct radial airflow, Glassman's outlets are incapable of creating the "circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion," required by claim 1. In fact, the Examiner appears to at least implicitly agree with this point since the Examiner does not rely on the configuration of Glassman's outlets for this limitation but, rather, on what would allegedly occur should hair be wrapped around the attachment during use. The Examiner asserts that "when hair is wrapped in front of these slots it becomes 'circumferential fluid flow around the cylindrical second portion'." However, this assertion is both irrelevant and unsupported.

First, whether or not the hair wrapped around Glassman's device causes a circumferential fluid flow is irrelevant because claim 1 recites that the outlet must be configured to cause the circumferential fluid flow—i.e., by directing fluid flow emitted from the outlet tangentially along and around the external surface of the wall. As explained above, Glassman's outlets direct flow radially outwardly and, thus, are not configured to direct "fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment," as required by claim 1.

Second, the Examiner's assertion that a circumferential fluid flow would necessarily occur from wrapping hair around Glassman's attachment is unsupported by evidence. The Examiner has not cited any teaching in Glassman that supports this assertion. Moreover, it is unclear why the Examiner believes that a circumferential fluid flow would result since the more likely result would be that the fluid flow would simply flow radially outwardly between the strands of hair since Glassman's outlets direct the flow radially outwardly. Regardless, there isn't any reason that a circumferential fluid flow would result any more than any other direction of airflow, and this certainly isn't a necessary result. (*See* MPEP 2112 IV (to support a rejection based on in inherency, the Examiner must show that the allegedly inherent characteristic is necessarily present.) Thus, the Examiner has failed to establish that Glassman's outlets direct "fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment," as recited in claim 1.

Even assuming, *arguendo*, that the airflow resulting from the hair being wrapped around Glassman's attachment were circumferential, any such airflow would not "encourages hair to automatically wrap around the cylindrical second portion," as required by claim 1. The Examiner asserts that it is the hair wrapped around the attachment that would cause the

circumferential air flow. Accordingly, the Examiner's own argument necessarily requires that the hair is resisting the radial momentum of the air flowing out of Glassman's outlets, allegedly causing the airflow to turn and flow circumferentially. This would not encourage hair to automatically wrap around the cylindrical second portion. Rather, the force on hair caused by the air flow would be a radially outward force (again, it is the hair that causes circumferential fluid flow in the Examiner's argument, not the outlets)—one that would not in any way encourage hair to automatically wrap around the cylindrical portion.

The Examiner does not provide any explanation supporting the assertion that the flow resulting from wrapping hair around Glassman's attachment "encourages hair to automatically wrap around the cylindrical second portion." The Examiner simply says that this limitation is met "according to the applicant." This is not true. Applicant teaches that an outlet that directs "fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment" can "encourage[] hair to automatically wrap around the cylindrical second portion." Applicant never teaches and has never argued that wrapping hair around a radially outwardly directed fluid flow would "encourage[] hair to automatically wrap around the cylindrical second portion."

Thus, Glassman fails to disclose or suggest an "outlet [that] . . . is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion," as recited in claim 1.

## IV. 35 U.S.C. 103 Rejection

Claims 1, 3, 5, 7, 9-16, and 36-38 are rejected under 35 U.S.C. 103 as being unpatentable over Speetjens (US-1,504,988) in view of Glassman. This rejection is respectfully traversed.



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Speetjens also fails to disclose or suggest "outlet [that] . . . is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion," as recited in claim 1.

Speetjens is not configured for wrapping hair around the device at all, much less to "direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion." As described in lines 81-94 of Speetjens, to use the device, the user coils hair around a curler, then wraps a moistened cloth around the hair coiled on the curler, and then inserts all of that into a cardboard tube. This entire assembly is then placed within Speetjen's tubular device. The device has a heating element for heating the coiled hair assembly (the hair wrapped around the curler and covered by a moistened cloth and cardboard tube) within the device and a plurality of adjustable air outlets for allowing heated air to escape. The outlets are formed by sets of slots that can be moved relative to one another to adjust amount that the slots are opened. There is no air flow in this device (other than passive heated air escaping through the slots) and hair is positioned within the device, not wrapped around the outside.

The examiner concedes that Speetjens fails to disclose the device as being attached to a handheld appliance with a source of fluid flow. The examiner argues that it would have been obvious in view of Glassman to attach the device of Speetjens to a source of air flow, which would allegedly result in air flow through the slots that flows tangentially around the outer surface of the device when hair is wrapped around the external surface of the device. The Examiner is wrong both in that the proposed combination would not result in an "outlet [that] . . .



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is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion," and in that such a modification of Speetjens device would change Speetjens's principle of operation.

First, to the extent Speetjens's outlets would direct fluid flow should Speetjens's device be modified as the Examiner proposes, any such fluid flow would be radially outward. Thus, for reasons similar to those discussed above with respect to Glassman, the Examiner's proposed combination fails to disclose or suggest an "outlet [that] . . . is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion," as recited in claim 1.

Second, the Examiner's proposed combination would change Speetjens's principle of operation. A proposed modification cannot change the principle of operation of a reference to establish obviousness. *In re Ratti*, 270 F.2d 810, 813 (CCPA 1959); *Plas-Pak*, 2015 WL 328222 at *2; MPEP 2143.01. As explained above, the principle of operation of Speetjens's device is to heat hair that has been wrapped around a curler, covered in a cloth and cardboard tube and placed within it. Wrapping hair around the outside of Speetjens's device is a completely different operation, and thus, a modification that would support a conclusion of obviousness.

Thus, the combination of Speetjens and Glassman also fails to disclose or suggest "Speetjens also fails to disclose or suggest "outlet [that] . . . is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that



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encourages hair to automatically wrap around the cylindrical second portion," as recited in claim 1.

Accordingly, the rejection of claim 1 should be withdrawn. The rejections of dependent claims 3, 5, 7-16, and 36-38 should be withdrawn at least for the respective dependencies of the claims.

If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. **03-1952** referencing docket no. **42466-20933.00**. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: January 22, 2020

Respectfully submitted,

Electronic Signature: /christopher gloria/
Christopher Gloria
Registration No.: 71,907
MORRISON & FOERSTER LLP
1650 Tysons Boulevard, Suite 400
McLean, Virginia 22102-4220
+1 (703) 760-7389

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 14656357 |
| **Filing Date:** | 12-Mar-2015 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Filer:** | Christopher Elmose Gloria/Yesenia Rivera |
| **Attorney Docket Number:** | 42466-20933.00 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| Extension - 2 months with $0 paid | 1252 | 1 | 600 | 600 |
| **Miscellaneous:** | | | | |
| | | **Total in USD ($)** | | **600** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 38366519 |
| **Application Number:** | 14656357 |
| **International Application Number:** | |
| **Confirmation Number:** | 9085 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Customer Number:** | 25227 |
| **Filer:** | Christopher Elmose Gloria/Yesenia Rivera |
| **Filer Authorized By:** | Christopher Elmose Gloria |
| **Attorney Docket Number:** | 42466-20933.00 |
| **Receipt Date:** | 22-JAN-2020 |
| **Filing Date:** | 12-MAR-2015 |
| **Time Stamp:** | 17:03:33 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $600 |
| RAM confirmation Number | E20201LH04118929 |
| Deposit Account | |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 424662093300_Amendment.pdf | 261762<br>d17611a5884d1640ebae7e2b0783bbcb5965b474 | yes | 13 |
| | **Multipart Description/PDF files in .zip description** | | | | |
| | **Document Description** | | **Start** | **End** | |
| | Response After Final Action | | 1 | 1 | |
| | Claims | | 2 | 5 | |
| | Applicant Arguments/Remarks Made in an Amendment | | 6 | 13 | |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Fee Worksheet (SB06) | fee-info.pdf | 30558<br>0d07b79ba4637348605993baa6c84f2eb996c457 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 292320 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>14/656,357 | Filing Date<br>03/12/2015 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY:** ☑ LARGE ☐ SMALL ☐ MICRO

## APPLICATION AS FILED - PART I

| FOR | (Column 1)<br>NUMBER FILED | (Column 2)<br>NUMBER EXTRA | | RATE ($) | FEE ($) |
|---|---|---|---|---|---|
| ☐ BASIC FEE<br>(37 CFR 1.16(a), (b), or (c)) | N/A | N/A | | N/A | |
| ☐ SEARCH FEE<br>(37 CFR 1.16(k), (i), or (m)) | N/A | N/A | | N/A | |
| ☐ EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q)) | N/A | N/A | | N/A | |
| TOTAL CLAIMS<br>(37 CFR 1.16(i)) | minus 20 = | * | | x $80 = | |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h)) | minus 3 = | * | | x $420 = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | | TOTAL | |

## APPLICATION AS AMENDED - PART II

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | 01/22/2020 | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * 32 | Minus | ** 36 | = 0 | | x $100 = | 0 |
| | Independent<br>(37 CFR 1.16(h)) | * 2 | Minus | *** 3 | = 0 | | x $460 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | 0 |

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * | Minus | ** | = | | x $0 = | |
| | Independent<br>(37 CFR 1.16(h)) | * | Minus | *** | = | | x $0 = | |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | |

| | |
|---|---|
| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. | LIE |
| ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". | /JAMES ELLIOTT/ |
| *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". | |
| The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1. | |

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

Docket No.: 42466-20933.00

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357

Confirmation No.: 9085

Filed: March 12, 2015

Art Unit: 3772

For: ATTACHMENT FOR A HAND HELD APPLIANCE

Examiner: Jennifer Frances Gill

**AMENDMENT UNDER 37 C.F.R. 1.116**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the final Office Action dated September 18, 2019, the period for response having been extended two months to February 18, 2020, please amend this application as follows.

Amendments to the claims begin on page 2.

Remarks begin on page 6.



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Page 1829 of 1998

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

# REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
## (Submitted Only via EFS-Web)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Application Number | 14/656,357 | Filing Date | 2015-03-12 | Docket Number (if applicable) | 42466-20933.00 | Art Unit | 3772 |
| First Named Inventor | Alasdair Michael MACLAINE | | | Examiner Name | Jennifer Frances Gill | | |

**This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.**
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

### SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☒ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

### MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____ (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

### FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 03-1952

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

| Signature of Registered U.S. Patent Practitioner | | | |
|---|---|---|---|
| Signature | /christopher gloria/ | Date (YYYY-MM-DD) | 2020-02-18 |
| Name | Christopher Gloria | Registration Number | 71907 |

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

# Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Docket No.: 42466-20933.00

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357

Confirmation No.: 9085

Filed: March 12, 2015

Art Unit: 3772

For: ATTACHMENT FOR A HAND HELD APPLIANCE

Examiner: Jennifer Frances Gill

**AMENDMENT UNDER 37 C.F.R. 1.111**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Further to the response filed January 22, 2020, and in response to the final Office Action dated September 18, 2019, the period for response having been extended two (2) months to February 18, 2020, and pursuant to action on the Request for Continued Examination filed concurrently herewith, please amend this application as follows.

Amendments to the claims begin on page 2.

Remarks begin on page 7.



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Page 1833 of 1998

**AMENDMENTS TO THE CLAIMS**

1. (Currently Amended) An attachment for a hand held appliance comprising an inlet in a proximal first portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending towards a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a substantially contiguous wall of the attachment and is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion, [[and]] wherein the external surface of the substantially contiguous wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot, and wherein the distal end of the attachment is closed.

2. (Canceled)

3. (Original) The attachment of claim 1, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

4. (Canceled)

5. (Currently Amended) The attachment of claim 1, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the external surface of the attachment.

6. (Canceled)

7. (Original) The attachment of claim 1, wherein the outlet comprises two slots.

8. (Previously Presented) The attachment of claim 1, wherein the attachment has a longitudinal axis and the at least one slot is parallel to the longitudinal axis.



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9. (Previously Presented) The attachment of claim 1, wherein the attachment has a longitudinal axis and the at least one slot is non-parallel to the longitudinal axis.

10. (Original) The attachment of claim 9, wherein the at least one slot is helical with respect to the longitudinal axis.

11. (Original) The attachment of claim 1, further comprising a flow directing element between the inlet and the outlet.

12. (Original) The attachment of claim 11, wherein the flow directing element comprises a perforated layer.

13. (Original) The attachment of claim 12, wherein the perforated layer is formed from a mesh or weave of an elongate material.

14. (Currently Amended) The attachment of claim [[13]] 12, wherein the perforated layer is formed from a mesh or a weave of elongate ~~material is a~~ wire.

15. (Previously Presented) The attachment of claim 12, wherein the flow directing element extends substantially along a length of the at least one slot.

16. (Original) The attachment of claim 12, wherein the flow directing element extends substantially around an inner circumference of the attachment.

17. (Withdrawn-Currently Amended) A hand held appliance comprising a handle having a fluid flow path from handle inlet to a handle outlet, a fan unit for drawing fluid into the handle inlet, and an attachment for attaching to the handle, the attachment comprising an inlet in a proximal first portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending towards a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a substantially contiguous wall of the attachment and is configured to direct fluid flow emitted



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from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion, [[and]] wherein the external surface of the wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot, and wherein the distal end of the attachment is closed.

18. (Canceled)

19. (Withdrawn) The appliance of claim 17, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

20. (Canceled)

21. (Withdrawn-Currently Amended) The appliance of claim 17, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the external surface of the attachment.

22. (Canceled)

23. (Withdrawn) The appliance of claim 17, wherein the outlet comprises two slots.

24. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment has a longitudinal axis and the at least one slot is parallel to the longitudinal axis.

25. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment has a longitudinal axis and the at least one slot is non-parallel to the longitudinal axis.

26. (Withdrawn) The appliance of claim 25, wherein the at least one slot is helical with respect to the longitudinal axis.

27. (Withdrawn) The appliance of claim 17, further comprising a flow directing element between the inlet and the outlet.

28. (Withdrawn) The appliance of claim 27, wherein the flow directing element comprises a perforated layer.

29. (Withdrawn) The appliance of claim 28, wherein the perforated layer is formed from a mesh or weave of an elongate material.

30. (Withdrawn-Currently Amended) The appliance of claim [[29]] 28, wherein the perforated layer is formed from a mesh or a weave of elongate ~~material is a~~ wire.

31. (Withdrawn-Previously Presented) The appliance of claim 27, wherein the flow directing element extends substantially along a length of the at least one slot.

32. (Withdrawn) The appliance of claim 27, wherein the flow directing element extends substantially around an inner circumference of the attachment.

33. (Withdrawn) The appliance of claim 17, wherein the appliance is a hair care appliance.

34. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling appliance.

35. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling brush.

36. (Previously Presented) The appliance of claim 1, wherein the wall comprises a plurality of plates.

37. (Previously Presented) The appliance of claim 1, wherein the at least one slot is formed by a gap between adjacent sections of the wall that are joined by at least one spacer disposed between the beginning of the at least one slot and the end of the at least one slot to maintain the gap.



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38. (Currently Amended) The appliance of claim 37, wherein the at least one spacer extends from an edge of a first section of the adjacent sections of the wall to an edge of a second section of the adjacent sections of the wall.



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## REMARKS

### I. Claim Status and Amendments

Claims 1, 3, 5, 7-17, 19, 21, and 23-38 were pending in the present application, of which claims 19, 21, and 23-38 were previously withdrawn. Claims 1, 5, 14, 17, 21, 30, and 38 have been amended. No new matter has been added. In a call with the Examiner pursuant to the after-final amendment filed January 22, 2020, the Examiner noted that the amendment will not be entered. Accordingly, the amendments herein reflect that the January 22nd amendment is not being entered.

With respect to any claim amendments and/or cancellations made herein, Applicant has not dedicated to the public or abandoned any unclaimed subject matter. Any amendments and/or cancellations have been made only in the interest of progressing the prosecution of this application and do not indicate that any amendments and/or cancellations are necessary for patentability. Moreover, Applicant has not acquiesced to any rejections and/or objections made by the Patent Office. Applicant reserves the right to pursue prosecution of any presently excluded claim embodiments in a future continuation and/or divisional application.

### II. Interview Summary

Applicant's representative, Christopher Gloria, thanks Examiner Gill for the courtesies extended during the interview on February 4, 2020. During the interview, the Examiner stated that the amendments filed on January 22, 2020, would not be entered because, in the Examiner's view, the amendment to claim 14 did not overcome the Examiner's objection. The Examiner suggested amending claim 14 to depend from claim 12 instead of claim 13 to overcome the objection. The Examiner also suggested amendments to claim 1 that further distinguish over the references, including reciting that the wall is a substantially contiguous wall and that the distal end of the attachment is closed. The claims have been amended as suggested by the Examiner.



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**III. Claim Objections**

Claims 5 and 14 are objected to because of informalities. The claims have been amended as suggested by the Examiner. Accordingly, Applicant respectfully requests that these objections be withdrawn.

**IV. Claim Rejections – 35 USC § 112**

Claims 1, 3, 5, 7-16, and 36-38 are rejected under 35 U.S.C. 112(b) as being indefinite. To address the Examiner's concerns, claims 1 and 38 have been amended as suggested by the Examiner. Accordingly, Applicant respectfully requests that this rejection be withdrawn.

**V. Claim Rejections – 35 USC § 102**

Claims 1, 3, 5, 7-8, and 36 are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Glassman (US-4,214,597). Claims 1, 3, 5, 7, 9-16, and 36-38 are rejected under 35 U.S.C. 103 as being unpatentable over Speetjens (US-1,504,988) in view of Glassman. This rejection is respectfully traversed. These rejections are respectfully traversed.

As noted above, claim 1 has been amended in accordance with the Examiner's suggestion to recite that "the outlet is at least partially defined by an external surface of a substantially contiguous wall of the attachment" and that "the distal end of the attachment is closed." These features in combination alone and in combination with the other features recited in claim 1 are not disclosed or suggested by the references.

Accordingly, the rejection of claim 1, as amended, should be withdrawn. The rejections of dependent claims 3, 5, 7-16, and 36-38 should be withdrawn at least for the respective dependencies of the claims.

If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.



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In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. **03-1952** referencing docket no. **42466-20933.00**. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: February 18, 2020

Respectfully submitted,

Electronic Signature: /christopher gloria/
Christopher Gloria
Registration No.: 71,907
MORRISON & FOERSTER LLP
1650 Tysons Boulevard, Suite 300
McLean, Virginia 22102-4220
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Page 1841 of 1998

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 14656357 |
| Filing Date | 2015-03-12 |
| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

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|---|---|---|---|

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

| | | | |
|---|---|---|---|
| | 1 | Heffer et al., U.S. Office Action dated December 27, 2019, directed to U.S. Application No. 15/468,500; 19 pages | |
| | 2 | MacLaine et al., U.S. Office Action dated September 9, 2019, directed to U.S. Application No. 14/656,432; 12 pages | |

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**EXAMINER SIGNATURE**

| Examiner Signature | | Date Considered | |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /christopher gloria/ | Date (YYYY-MM-DD) | 2020-02-18 |
|---|---|---|---|
| Name/Print | Christopher Gloria | Registration Number | 71,907 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 14656357 |
| **Filing Date:** | 12-Mar-2015 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Filer:** | Christopher Elmose Gloria/Laura Razzuri |
| **Attorney Docket Number:** | 42466-20933.00 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| Extension - 2 months with $600 paid | 1252 | 1 | 0 | 0 |
| **Miscellaneous:** | | | | |
| RCE- 2ND AND SUBSEQUENT REQUEST | 1820 | 1 | 1900 | 1900 |
| | | **Total in USD ($)** | | **1900** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 38615191 |
| **Application Number:** | 14656357 |
| **International Application Number:** | |
| **Confirmation Number:** | 9085 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Customer Number:** | 25227 |
| **Filer:** | Christopher Elmose Gloria/Yesenia Rivera |
| **Filer Authorized By:** | Christopher Elmose Gloria |
| **Attorney Docket Number:** | 42466-20933.00 |
| **Receipt Date:** | 18-FEB-2020 |
| **Filing Date:** | 12-MAR-2015 |
| **Time Stamp:** | 15:46:17 |
| **Application Type:** | Utility under 35 USC 111(a) |

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|---|---|
| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $1900 |
| RAM confirmation Number | E20202HF48446166 |
| Deposit Account | |
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## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Request for Continued Examination (RCE) | 424662093300_RCE.pdf | 1349854<br>596fca52d17fd866fd7050ded9a034797c458186 | no | 3 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | | 424662093300_AmendmentwithRCE.pdf | 131160<br>be3cadadcfda3dbf4e629c633acbb3a8e1afafdc | yes | 9 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Amendment Submitted/Entered with Filing of CPA/RCE | 1 | 1 |
| | Claims | 2 | 6 |
| | Applicant Arguments/Remarks Made in an Amendment | 7 | 9 |

| | | | | | |
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| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Information Disclosure Statement (IDS) Form (SB08) | 424662093300_IDS.pdf | 1057574<br>ae4273ee2101e351bebeb2eae448f372c39b2829 | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Non Patent Literature | 14656432_2093400_09-09-2019.pdf | 503439<br>80886b27066e90ee2bf535d8941f80b98b96daa2 | no | 12 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | Non Patent Literature | 15468500_2111700_12-27-2019.pdf | 881397<br>80c4cdadd136bff84467a5b5266ff3ee21e006cb | no | 19 |

| | | | | | |
|---|---|---|---|---|---|
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 6 | Fee Worksheet (SB06) | fee-info.pdf | 32636<br>12574c55421548f059aff9c85bb63aa33c1c3f99 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 3956060 | | |

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**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>14/656,357 | Filing Date<br>03/12/2015 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY:** ☑ LARGE ☐ SMALL ☐ MICRO

## APPLICATION AS FILED - PART I

| FOR | (Column 1)<br>NUMBER FILED | (Column 2)<br>NUMBER EXTRA | | RATE ($) | FEE ($) |
|---|---|---|---|---|---|
| ☐ BASIC FEE<br>(37 CFR 1.16(a), (b), or (c)) | N/A | N/A | | N/A | |
| ☐ SEARCH FEE<br>(37 CFR 1.16(k), (i), or (m)) | N/A | N/A | | N/A | |
| ☐ EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q)) | N/A | N/A | | N/A | |
| TOTAL CLAIMS<br>(37 CFR 1.16(i)) | minus 20 = | * | | x $80 = | |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h)) | minus 3 = | * | | x $420 = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | | TOTAL | |

## APPLICATION AS AMENDED - PART II

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | 02/18/2020 | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * 32 | Minus | ** 36 | = 0 | | x $100 = | 0 |
| | Independent<br>(37 CFR 1.16(h)) | * 2 | Minus | *** 3 | = 0 | | x $460 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | 0 |

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * | Minus | ** | = | | x $0 = | |
| | Independent<br>(37 CFR 1.16(h)) | * | Minus | *** | = | | x $0 = | |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | |

| | |
|---|---|
| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. | LIE |
| ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". | /TERRY BRYANT/ |
| *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". | |
| The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1. | |

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>14/656,357 | Filing Date<br>03/12/2015 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY:** ☑ LARGE ☐ SMALL ☐ MICRO

## APPLICATION AS FILED - PART I

| FOR | (Column 1)<br>NUMBER FILED | (Column 2)<br>NUMBER EXTRA | | RATE ($) | FEE ($) |
|---|---|---|---|---|---|
| ☐ BASIC FEE<br>(37 CFR 1.16(a), (b), or (c)) | N/A | N/A | | N/A | |
| ☐ SEARCH FEE<br>(37 CFR 1.16(k), (i), or (m)) | N/A | N/A | | N/A | |
| ☐ EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q)) | N/A | N/A | | N/A | |
| TOTAL CLAIMS<br>(37 CFR 1.16(i)) | minus 20 = | * | | x $80 = | |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h)) | minus 3 = | * | | x $420 = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | | TOTAL | |

## APPLICATION AS AMENDED - PART II

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | 02/18/2020 | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * 32 | Minus | ** 36 | = 0 | | x $100 = | 0 |
| | Independent<br>(37 CFR 1.16(h)) | * 2 | Minus | *** 3 | = 0 | | x $460 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | 0 |

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * | Minus | ** | = | | x $0 = | |
| | Independent<br>(37 CFR 1.16(h)) | * | Minus | *** | = | | x $0 = | |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | |

| | |
|---|---|
| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. | LIE |
| ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". | /TERRY BRYANT/ |
| *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". | |
| The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1. | |

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 14/656,357 | 03/12/2015 | Alasdair Michael MACLAINE | 42466-20933.00 | 9085 |

25227 7590 02/20/2020

MORRISON & FOERSTER LLP
1650 TYSONS BOULEVARD
SUITE 300
MCLEAN, VA 22102

| EXAMINER | |
|---|---|
| GILL, JENNIFER FRANCES | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3772 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 02/20/2020 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

EOfficeVA@mofo.com
PatentDocket@mofo.com
pair_mofo@firsttofile.com

| ***Advisory Action Before the Filing of an Appeal Brief*** | **Application No.** 14/656,357 | **Applicant(s)** MACLAINE, Alasdair Michael | |
|---|---|---|---|
| | **Examiner** JENNIFER F GILL | **Art Unit** 3772 | **AIA (FITF) Status** Yes |

***--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --***

THE REPLY FILED 22 January 2020 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ☑ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:
   a) ☑ The period for reply expires 3 months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
   c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection.The current period for reply expires ____ months from the mailing date of *the prior Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.
   *Examiner Note*: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANTS FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37CFR 41.37(a).

AMENDMENTS

3. ☑ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   a) ☑ They raise new issues that would require further consideration and/or search (see NOTE below);
   b) ☐ They raise the issue of new matter (see NOTE below);
   c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: See Continuation Sheet (See 37CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicants reply has overcome the following rejection(s): _____
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☑ For purposes of appeal, the proposed amendment(s):(a) ☑ will not be entered, or (b) ☐ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____
9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☑ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
13. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
14. ☑ Other: Int summary 2/4/20.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:
    Claim(s) allowed:_____.
    Claim(s) objected to:_____.
    Claim(s) rejected:1,3,5,7-16 and 36-38.
    Claim(s) withdrawn from consideration:17,21 and 23-35.

| /JENNIFER F GILL/<br>EXAMINER, Art Unit 3772 | /YOGESH P PATEL/<br>Primary Examiner, Art Unit 3772 |
|---|---|



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Page 1854 of 1998

Continuation of 3. NOTE: While the proposed changes to claim 1 and 38 overcome the previous 112(b) issues. However, applicant amended claim 14 to now repeat limitations present in preceding claim 13 from which claim 14 depends creating a new clarity issue in that it is now unclear if the perforated layer is supposed to be multiple layers of mesh or just one. As explained during the interview (see summary) applicant can overcome this by amending the claim to depend from claim 12 instead of claim 13.

Continuation of REQUEST FOR RECONSIDERATION/OTHER 12. The request for reconsideration has been considered but does NOT place the application in condition for allowance because: As discussed above, the proposed amendment creates new issues and therefore requires further search and consideration so it does not place the application in condition for allowance. Applicant argues that Glassman fails to teach the functional language claimed by applicant because Glassman teaches the attachment directing fluid outward. However, as discussed in the previous rejection, when hair is wrapped around these outlets,which is how the device is used, the hair would serve to deflect the air such that the air would be directed tangentially around and along the external surface of the attachment through the hair thereby meeting the claim limitations. The same is true of Speetjens, so these arguments are not persuasive. Additionally, applicant is reminded that while the claims set forth this functional limitation, this function can only be achieved with air moving at a particular speed and applicant's claims do not set forth any actual source of air causing this to happen. So Speetjens and Glassman as outlined in the final rejection teach all of the structure set forth in applicant's claims such that they are capable of performing what amounts to an intended use of the structure functionally claimed by applicant.

| *Applicant-Initiated Interview Summary* | **Application No.** 14/656,357 | **Applicant(s)** MACLAINE, Alasdair Michael | |
|---|---|---|---|
| | **Examiner** JENNIFER F GILL | **Art Unit** 3772 | **AIA (FITF) Status** Yes |

All participants (applicant, applicants representative, PTO personnel):

(1) JENNIFER F. GILL. (3) _____.

(2) CHRISTOPHER GLORIA. (4) _____.

Date of Interview: 04 February 2020.

Type: ☑ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☑ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1,5,14 and 38.

Identification of prior art discussed: Speetjens (US 1504988) & Glassman (US 4214597).

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

The office indicated that the after final amendment would not be entered because while the amendments to claims 1 and 5 and 38 overcome the previous issues, the proposed amendment to claim 14 creates new indefinite issues as to how many perforated layers are being claimed,which could be overcome by amending this claim to depend from claim 12 instead of claim 13. The office indicated that while applicant's arguments assert that the prior art fails to teach the claimed functional recitation of tangential fluid flow in use, that the prior art teaches this because in Glassman, hair would serve to cause this while air is emitted from the device. The office also indicated that because the claims are not method claims, the claims must overcome the prior art in terms of structure and not in function so since Speetjens and Glassman teach all the structural limitations required by the claims they are interpreted to be capable of performing the claimed function(s). The office suggested amending the claims to set forth that the external cylindrical wall of the attachment is contiguous and that the distal end of the attachment is closed and does not allow air flow therethrough in order to overcome the prior art.

**Applicant recordation instructions:** The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

**Examiner recordation instructions**: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

| /JENNIFER F GILL/<br>EXAMINER, Art Unit 3772 | /YOGESH P PATEL/<br>Primary Examiner, Art Unit 3772 |
|---|---|

# Summary of Record of Interview Requirements

**Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record**
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

**Title 37 Code of Federal Regulations (CFR) 1.133 Interviews**
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

---

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiners responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicants correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,-
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicants record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

**Examiner to Check for Accuracy**

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiners version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, Interview Record OK on the paper recording the substance of the interview along with the date and the examiners initials.

DO NOT ENTER
/JG/
2/4/20

Docket No.: 42466-20933.00

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357

Confirmation No.: 9085

Filed: March 12, 2015

Art Unit: 3772

For: ATTACHMENT FOR A HAND HELD APPLIANCE

Examiner: Jennifer Frances Gill

**AMENDMENT UNDER 37 C.F.R. 1.116**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the final Office Action dated September 18, 2019, the period for response having been extended two months to February 18, 2020, please amend this application as follows.

Amendments to the claims begin on page 2.

Remarks begin on page 6.



SharkNinja Ex. 1002
Page 1858 of 1998

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 14656357 |
| Filing Date | 2015-03-12 |
| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 3224454 | A | 1965-12-21 | Quinio et al. | |
| | 2 | 4422464 | A | 1983-12-27 | Josefsson | |
| | 3 | 4602146 | A | 1986-07-22 | Barns et al. | |
| | 4 | 5157757 | A | 1992-10-20 | McDougall | |

If you wish to add additional U.S. Patent citation information please click the Add button. Add

**U.S.PATENT APPLICATION PUBLICATIONS** Remove

| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 20030079366 | A1 | 2003-05-01 | Chang | |
| | 2 | 20030177657 | A1 | 2003-09-25 | Andis et al. | |

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

**FOREIGN PATENT DOCUMENTS** Remove

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

| Examiner Initial* | Cite No | Foreign Document Number[3] | Country Code[2] i | Kind Code[4] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | T[5] |
|---|---|---|---|---|---|---|---|---|
| | 1 | | | | | | | |

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**NON-PATENT LITERATURE DOCUMENTS** Remove

| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|
| | 1 | Mason et al., U.S. Office Action dated February 28, 2020, directed to U.S. Application No. 15/468,502; 17 pages | |

If you wish to add additional non-patent literature document citation information please click the Add button Add

**EXAMINER SIGNATURE**

| Examiner Signature | | Date Considered | |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /christopher gloria/ | Date (YYYY-MM-DD) | 2020-03-03 |
|---|---|---|---|
| Name/Print | Christopher Gloria | Registration Number | 71,907 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 38757037 |
| **Application Number:** | 14656357 |
| **International Application Number:** | |
| **Confirmation Number:** | 9085 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Customer Number:** | 25227 |
| **Filer:** | Christopher Elmose Gloria/Yesenia Rivera |
| **Filer Authorized By:** | Christopher Elmose Gloria |
| **Attorney Docket Number:** | 42466-20933.00 |
| **Receipt Date:** | 03-MAR-2020 |
| **Filing Date:** | 12-MAR-2015 |
| **Time Stamp:** | 16:09:30 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Information Disclosure Statement (IDS) Form (SB08) | 424662093300_IDS.pdf | 1067082<br>84958ceeccbfdea789754df15d4f3de115d3a920 | no | 4 |

**Warnings:**

| Information: | | | | | |
|---|---|---|---|---|---|
| 2 | Non Patent Literature | 15468502_2111900_02-28-2020.pdf | 677854<br>4d72b6b0d67e05abc5b6b56c8cb4af2c6e43873b | no | 17 |
| Warnings: | | | | | |
| Information: | | | | | |
| | | | Total Files Size (in bytes): | 1744936 | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 14/656,357 | 03/12/2015 | Alasdair Michael MACLAINE | 42466-20933.00 | 9085 |

25227 7590 04/15/2020

MORRISON & FOERSTER LLP
1650 TYSONS BOULEVARD
SUITE 300
MCLEAN, VA 22102

| EXAMINER | |
|---|---|
| GILL, JENNIFER FRANCES | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3772 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 04/15/2020 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

EOfficeVA@mofo.com
PatentDocket@mofo.com
pair_mofo@firsttofile.com



SharkNinja Ex. 1002
Page 1865 of 1998

| *Office Action Summary* | **Application No.** 14/656,357 | **Applicant(s)** MACLAINE, Alasdair Michael | |
|---|---|---|---|
| | **Examiner** JENNIFER F GILL | **Art Unit** 3772 | **AIA (FITF) Status** Yes |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☑ Responsive to communication(s) filed on 2/18/20 & 3/3/20.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims***

5) ☑ Claim(s) 1,3,5,7-17,19,21 and 23-38 is/are pending in the application.

5a) Of the above claim(s) 17,19,21 and 23-35 is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1,3,5,7-16 and 36-38 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

**Application Papers**

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 2/18/20 & 3/3/20.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/18/20 has been entered.

### *Information Disclosure Statement*

The information disclosure statement(s) (IDS) submitted on 2/18/20 and 3/3/20 was/were filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement(s) has/have been considered by the examiner.

### *Claim Rejections - 35 USC § 102*

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

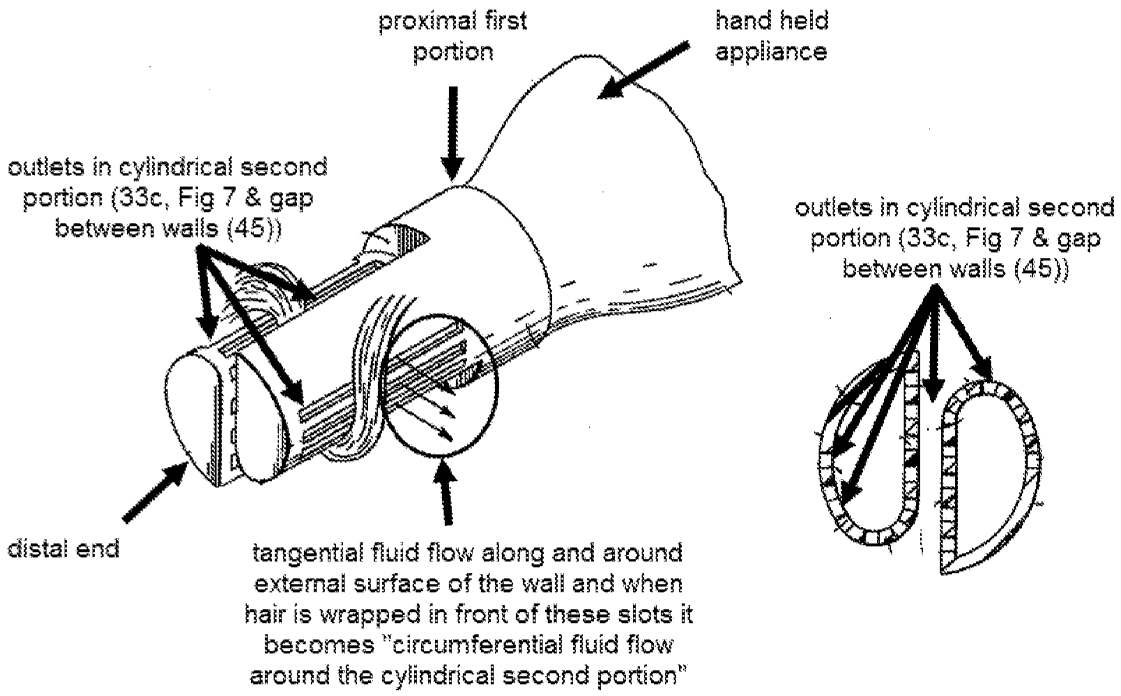
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

**Claim(s) 1, 3, 5, 7-8, and 36 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Glassman (US 4214597).**

**Claims 1, 3, 5, and 7**, Glassman teaches an attachment (12c, see Fig 6) for a handheld appliance (49; Col 4, 45-50) comprising an inlet (interior of 12c) in a first proximal portion of the attachment; an outlet (33c) in a cylindrical second portion of the attachment (see Figs 6-7 & annotations); and a fluid flow path (Col 4, 45-50) between the inlet and the outlet (see Fig 6-7 & annotations), wherein the outlets in the cylindrical second portion comprise a plurality of slots (33c & the gap between the walls (45, Fig 7)) radially spaced around the attachment (see Figs 6-7 & annotations) and these slots extend towards a distal end of the attachment (see Figs 6-7 & annotations). The outlet is at least partially defined by an external surface of a "substantially contiguous" wall of the attachment since "substantially" is undefined and dictionary.com defines "contiguous" as "in close proximity without actually touching; near". The slots are configured to direct fluid flow emitted from the outlets tangentially along and around the "substantially" contiguous external surface of the wall (see annotations) and with hair wrapped around the device this results in forming a circumferential fluid flow around the cylindrical second portion of the attachment and according to applicant this fluid flow "encourages hair to automatically wrap around" the cylindrical second portion and causes "the fluid emitted from the outlet to be attracted to the surface of the attachment" (see annotations). The external surface of the wall(s) form an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot (see annotations). The distal end of the attachment is closed (see Fig 6).

**Claim 8**, Glassman teaches the invention of claim 1 and further teaches the attachment has a longitudinal axis and the slots extend parallel to this longitudinal axis (see annotations).




**Claim 36**, Glassman teaches the invention of claim 1 and teaches the wall comprising a plurality of plates because each solid piece between the slots in Figure 6 constitutes a plate (see annotations).

**Claim(s) 1, 3, 5, 7-12, 15-16, and 36-38 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Vicory (US 5626156).**

**Claim 1**, Vicory teaches an attachment (see Figs 1-11) for a handheld appliance (see Fig 1) comprising an inlet in a first proximal portion (24+11) of the attachment; an outlet in a cylindrical second portion of the attachment (see Figs 6-7 & 10-11); and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical

second portion of the attachment comprises at least one slot (16 & 46) extending towards a distal end of the attachment and the outlet is at least partially defined by an external surface of a "substantially contiguous" external wall surface of the attachment since "substantially" is undefined and dictionary.com defines "contiguous" as "in close proximity without actually touching; near" (see Figs 6 & 10). The outlets are configured to direct fluid flow emitted from the outlets tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment when hair is wrapped around it and hair can be encouraged to automatically warp around the cylindrical second portion when it's rotated or when air moves through the attachment. The external surface of the substantially contiguous wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot (see Figs 6 & 10) and the distal end of the attachment is closed (see Figs 7 & 11).

**Claim 3**, Vicory teaches the invention of claim 1 and further teaches the outlet comprising a plurality of slots radially space around the attachment (see Figs 6-7 & 10-11).

**Claim 5**, Vicory teaches the invention of claim 1 and further teaches that in use when hair is wrapped around the device, fluid emitted from the outlet is attracted to the external surface of the attachment since the hair would block the fluid flow (see Figs 6-7 & 10-11).

**Claim 7**, Vicory teaches the invention of claim 1 and further teaches the outlet comprising at least two slots (see Figs 6 & 10).

**Claim 8**, Vicory teaches the invention of claim 1 and further teaches the attachment having a longitudinal axis and the at least one slot being parallel to the longitudinal axis (see Figs 10-11).

**Claims 9-10**, Vicory teaches the invention of claim 1 and further teaches the attachment having a longitudinal axis and the at least one slot being non-parallel and helical (see Figs 6-7) with respect to the longitudinal axis.

**Claims 11-12**, Vicory teaches the invention of claim 1 and further teaches a flow directing element (32+34+36) between the inlet and the outlet with this element including a perforated layer (34, see Figs 2-5).

**Claims 15-16**, Vicory teaches the invention of claim 12 and further teaches the flow directing element (30+32) extending substantially along a length of the at least one slot and the flow directing element (34) extending around an inner circumference of the attachment (see Figs 1-11).

**Claim 36**, Vicory teaches the invention of claim 1 and further teaches the wall comprising a plurality of longitudinal and radial plates (see Figs 6-7 & 10-11).

**Claims 37-38**, Vicory teaches the invention of claim 1 and further teaches the at least one slot (16 & 46) being formed by a gap between adjacent sections of the longitudinal wall that are joined by at least one radial plate spacer (12 & 42) disposed between the beginning of the at least one slot and the end of the at least one slot to maintain the slot gap (see Figs 6-7 & 10-11). The space extends from a left edge of a first section of adjacent sections of the wall to a second right edge of a second section of adjacent sections of the wall (see Figs 6-7 & 10-11).

***Claim Rejections - 35 USC § 103***

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim(s) 11-16 is/are rejected under 35 U.S.C. 103 as being obvious over Vicory (US 5626156) in view of Denebeim (US 5515874).**

**Claims 11-16**, Vicory teaches the invention of claim 1 and discloses the invention essentially as claimed except for a flow directing wire mesh layer formed along a length of the at least one slot and around an inner circumference of the attachment. Denebeim, however, teaches providing heated hair curlers with an inner perforated layer of metal wire mesh (60, Fig 6; Col 6, 49-62) that is shaped to conform to the inner circumference of the hair curler that can be attached to separate heat source in order to evenly heat the curler for use with the heat conductive wire layer (Col 6, 49-62). Therefore, it would have been obvious to one possessing ordinary skill in the art at the time of filing to modify the attachment of Vicory by providing it with an internal wire mesh layer (which is perforated) shaped to conform to the inner circumference of the hair curler attachment in view of Denebeim in order to retain heat in the hair curler

attachment when in use. The proposed modification of providing a wire mesh layer within the cylindrical attachment would result in the wire mesh perforated layer being formed along a length of the at least one slot and around an inner circumference of the attachment as claimed.

***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are not persuasive. Applicant amended the claims to require the wall be "substantially contiguous"; however, the term "substantially" is undefined by applicant's disclosure and dictionary.com defines "contiguous" as "in close proximity without actually touching; near" and the plates of Glassman are in close proximity without actually touching, or are near to each other.

The new claim language overcomes the rejection of the claims as anticipated by Speetjens mooting these arguments.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Gill whose telephone number is (571)270-1797. The examiner can normally be reached on Monday-Friday 10:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, ***please contact the examiner's supervisor, Cris Rodriguez, at* (571) 272-4964**. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JENNIFER GILL/
Examiner, Art Unit 3772
/YOGESH P PATEL/
Primary Examiner, Art Unit 3772

| Notice of References Cited | Application/Control No. 14/656,357 | Applicant(s)/Patent Under Reexamination MACLAINE, Alasdair Michael | |
|---|---|---|---|
| | Examiner JENNIFER F GILL | Art Unit 3772 | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | CPC Classification | US Classification |
|---|---|---|---|---|---|---|
| * | A | US-5626156-A | 05-1997 | Vicory, Sr.; Gary L. | A45D2/10 | 132/229 |
| * | B | US-20130111777-A1 | 05-2013 | JEONG; Hae-Kyung | A45D20/12 | 34/97 |
| * | C | US-5740820-A | 04-1998 | Stern; Paule | A45D2/362 | 132/228 |
| * | D | US-5515874-A | 05-1996 | Denebeim; Sabrina | A45D2/24 | 132/210 |
| * | E | US-20140007448-A1 | 01-2014 | COURTNEY; Stephen Benjamin | A45D20/00 | 34/97 |
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**FOREIGN PATENT DOCUMENTS**

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**NON-PATENT DOCUMENTS**

| * | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
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| | U | |
| | V | |
| | W | |
| | X | |

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 14/656,357 | MACLAINE, Alasdair Michael |
| | Examiner | Art Unit |
| | JENNIFER F GILL | 3772 |

| CPC - Searched* | | |
|---|---|---|
| **Symbol** | **Date** | **Examiner** |
| A45D 1/02, 2/06, 2/10, 2/125, 2/127, 2/14, 2/24, 2/2407, 2/2414, 2/2421, 2/245, 2/2457, 2/2485, 2/2492, 20/10, 20/122, 20/124, 20/50 | 1/25-2/3/17 | JG |
| A46B 9/023, 15/003 | 1/25-2/3/17 | JG |
| A45D2/12, 2/22, 2/2464, 20/12, 4/04, 4/08, 4/12, 6/02, 7/02 | 3/19-3/25/20 | JG |
| updated search | 3/19-3/25/20 | JG |

| CPC Combination Sets - Searched* | | |
|---|---|---|
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| | | |

| US Classification - Searched* | | | |
|---|---|---|---|
| **Class** | **Subclass** | **Date** | **Examiner** |
| 132 | 210, 211, 227, 268 | 3/19-3/25/20 | JG |
| 219 | 226 | 3/19-3/25/20 | JG |
| 34 | 96-99 | 3/19-3/25/20 | JG |
| D28 | 10, 12, 15, 18 | 3/19-3/25/20 | JG |
| D32 | 31 | 3/19-3/25/20 | JG |

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

| | |
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| | /JENNIFER F GILL/<br>EXAMINER, Art Unit 3772 |



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Page 1876 of 1998

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 14/656,357 | MACLAINE, Alasdair Michael |
| | Examiner | Art Unit |
| | JENNIFER F GILL | 3772 |

| Search Notes | | |
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| **Search Notes** | **Date** | **Examiner** |
| 132.CLAS (WITH TEXT SEE EAST HISTORY) | 1/25-2/3/17 | JG |
| USPC SEARCH WITH TEXT | 1/25-2/3/17 | JG |
| CPC SEARCH | 1/25-2/3/17 | JG |
| INVENTOR SEARCH | 1/25-2/3/17 | JG |
| ASSIGNEE SEARCH | 1/25-2/3/17 | JG |
| TEXT SEARCH (SEE EAST HISTORY) | 1/25-2/3/17 | JG |
| NPL SEARCH | 1/25-2/3/17 | JG |
| CONSULT WITH KIM SANG OF USPC 242 | 1/25-2/3/17 | JG |
| A45D 1/02, 2/06, 2/10, 2/125, 2/127, 2/14, 2/24, 2/2407, 2/2414, 2/2421, 2/245, 2/2457, 2/2485, 2/2492, 20/10, 20/122, 20/124, 20/50 | 1/25-2/3/17 | JG |
| A46B 9/023, 15/003 | 1/25-2/3/17 | JG |
| updated search notes | 7/31-8/3/17 | jg |
| updated search notes | 12/29/17-1/2/18 | jg |
| updated search | 7/23-7/29/19 | JG |
| A45D2/12, 2/22, 2/2464, 20/12, 4/04, 4/08, 4/12, 6/02, 7/02 | 3/19-3/25/20 | JG |
| updated search | 3/19-3/25/20 | JG |
| 132/210, 211, 227, 268 | 3/19-3/25/20 | JG |
| 219/226 | 3/19-3/25/20 | JG |
| 34/96-99 | 3/19-3/25/20 | JG |
| D28/10, 12, 15, 18 | 3/19-3/25/20 | JG |
| D32/31 | 3/19-3/25/20 | JG |

| Interference Search | | | |
|---|---|---|---|
| **US Class/CPC Symbol** | **US Subclass/CPC Group** | **Date** | **Examiner** |
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| | /JENNIFER F GILL/<br>EXAMINER, Art Unit 3772 |



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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 14656357 |
| Filing Date | 2015-03-12 |
| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

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| | 1 | 20070119069 | A1 | 2007-05-31 | Shim | |

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|---|---|---|---|



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

| | | | |
|---|---|---|---|
| | 1 | Heffer et al., U.S. Office Action dated December 27, 2019, directed to U.S. Application No. 15/468,500; 19 pages | |
| | 2 | MacLaine et al., U.S. Office Action dated September 9, 2019, directed to U.S. Application No. 14/656,432; 12 pages | |

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**EXAMINER SIGNATURE**

| Examiner Signature | /JENNIFER F GILL/ | Date Considered | 03/25/2020 |
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /christopher gloria/ | Date (YYYY-MM-DD) | 2020-02-18 |
|---|---|---|---|
| Name/Print | Christopher Gloria | Registration Number | 71,907 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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**EAST Search History**

**EAST Search History (Prior Art)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| S219 | 9 | (("20040129289") or ("20140144037") or ("2007077040") or ("20150140506")).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2020/03/24 20:06 |
| S218 | 1 | ("2017/0273421").URPN. | USPAT | OR | ON | 2020/03/24 19:54 |
| S217 | 4351 | A45D20/12.cpc. not (S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 S185 S197 S198 S199 S200 S201 S202 S203 S204 S205 S206 S207 S208 S209 S210 S211 S212 S213 S215 S216) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/24 19:52 |
| S216 | 588 | A45D4/12.cpc. not (S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 S185 S197 S198 S199 S200 S201 S202 S203 S204 S205 S206 S207 S208 S209 S210 S211 S212 S213 S215) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/24 19:49 |
| S215 | 169 | A45D4/08.cpc. not (S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 S185 S197 S198 S199 S200 S201 S202 S203 S204 S205 S206 S207 S208 S209 S210 S211 S212 S213) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/24 19:45 |
| S214 | 25 | ("2783763" \| "2847015" \| "3990460" \| "4249550" \| "4258732" \| "4284091" \| "4430808" \| "4538362" \| "4548218" \| "4829155" \| "5091630" \| "5215107").PN. OR ("5626156").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 19:38 |
| S213 | 126 | A45D4/04.cpc. not (S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 S185 S197 S198 S199 S200 S201 S202 S203 S204 S205 S206 S207 S208 S209 S210 S211) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/24 19:37 |
| S212 | 625 | A45D7/02.cpc. not (S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 S185 S197 S198 S199 S200 S201 S202 S203 S204 S205 S206 S207 S208 S209 S210 S211) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/24 19:30 |
| S211 | 495 | A45D6/02.cpc. not (S186 S187 S188 S189 | US- | OR | ON | 2020/03/24 |



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|---|---|---|---|---|---|---|
| | | S190 S191 S192 S193 S194 S195 S196 S185 S197 S198 S199 S200 S201 S202 S203 S204 S205 S206 S207 S208 S209 S210) | PGPUB; USPAT; USOCR; FPRS; EPO; JPO | | | 18:51 |
| S210 | 160 | 132/227.ccls. not (S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 S185 S197 S198 S199 S200 S201 S202 S203 S204 S205 S206 S207 S208 S209) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/24 18:50 |
| S209 | 229 | 132/211.ccls. not (S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 S185 S197 S198 S199 S200 S201 S202 S203 S204 S205 S206 S207 S208) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/24 18:44 |
| S208 | 286 | 132/210.ccls. not (S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 S185 S197 S198 S199 S200 S201 S202 S203 S204 S205 S206 S207) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/24 18:25 |
| S207 | 571 | 34/99.ccls. not (S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 S185 S197 S198 S199 S200 S201 S202 S203 S204 S205 S206) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/24 18:05 |
| S189 | 59 | ("0043484" \| "2603062" \| "3797752" \| "4232454" \| "4602146").PN. OR ("5157757").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
| S185 | 35 | ("0056531" \| "0720169" \| "1115057" \| "2335179" \| "2557510" \| "2781047" \| "3105503" \| "3123079" \| "3326495" \| "3623491" \| "3683940" \| "3712310" \| "4141370").PN. OR ("4456020").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
| S193 | 31 | ("0816897" \| "2713627" \| "3465968" \| "3550285").PN. OR ("3860174").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
| S190 | 68 | ("10021951" \| "10028574" \| "20140083446" \| "20160166033" \| "20160166035" \| "20160206075" \| "20160206076" \| "20160206077" \| "20160338464" \| "20160338465" \| "20170112256" \| "20170164709" \| "20170273422" \| "20170273425" \| "20170273428" \| "20170273429" \| "20170273431" \| "20180055181" \| "20180055184" \| "4232454" \| "5157757" \| "6460272" \| "6662811" \| "6962159" \| "7096598" \| "9808067" \| "9986810" \| "D256280" \| "D256846" \| "D259665" \| "D277417" \| "D294743" \| "D322892" \| "D386816" \| | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |



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|---|---|---|---|---|---|---|
| | | "D398073" \| "D398074" \| "D409796" \| "D425663" \| "D439012" \| "D439701" \| "D448115" \| "D457730" \| "D476443" \| "D506030" \| "D510192" \| "D557017" \| "D609857" \| "D676600" \| "D700018" \| "D754313" \| "D775418" \| "D775419" \| "D776345" \| "D782731" \| "D782732" \| "D782733" \| "D782734" \| "D790785" \| "D791407" \| "D798502" \| "D800454" \| "D810927" \| "D811009" \| "D814130" \| "D815837" \| "D817643" \| "D823004" \| "D823005").PN. OR ("D855252").URPN. | | | | |
| S201 | 67 | ("10021951" \| "10028574" \| "20140083446" \| "20160166033" \| "20160166035" \| "20160206075" \| "20160206076" \| "20160206077" \| "20160338464" \| "20160338465" \| "20170112256" \| "20170164709" \| "20170273422" \| "20170273425" \| "20170273428" \| "20170273429" \| "20170273431" \| "20180055181" \| "20180055184" \| "4232454" \| "5157757" \| "6460272" \| "6662811" \| "6962159" \| "7096598" \| "9808067" \| "9986810" \| "D256280" \| "D256846" \| "D259665" \| "D277417" \| "D322892" \| "D386816" \| "D398073" \| "D398074" \| "D409796" \| "D425663" \| "D439012" \| "D439701" \| "D448115" \| "D457730" \| "D476443" \| "D506030" \| "D510192" \| "D557017" \| "D609857" \| "D676600" \| "D700018" \| "D754313" \| "D775418" \| "D775419" \| "D776345" \| "D782731" \| "D782732" \| "D782733" \| "D782734" \| "D790785" \| "D791407" \| "D798502" \| "D800454" \| "D810927" \| "D811009" \| "D814130" \| "D815837" \| "D817643" \| "D823004" \| "D823005").PN. OR ("D848068").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
| S187 | 56 | ("20040163274" \| "20040172847" \| "20050072019" \| "20050229422" \| "20060075654" \| "20070294909" \| "20100064542" \| "20100065545" \| "20110079239" \| "20110177711" \| "20110203128" \| "20110219636" \| "20130111777" \| "20130269200" \| "20130269201" \| "20130276320" \| "20130276321" \| "20130283630" \| "20130283631" \| "20140007448" \| "20140007449" \| "20150007854" \| "20150007855" \| "3265075" \| "4250902" \| "4350872" \| "4596921" \| "4767914" \| "5133043" \| "5378882" \| "5546674" \| "5572800" \| "5598640" \| "5681630" \| "5875562" \| "6203349" \| "6751886" \| "6889445" \| "7412781" \| "8082679" \| "8132571" \| "D350413" \| "D352365" \| "D550813" \| "D646354" \| "D696386" \| "D702322").PN. OR ("9526310").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
| S202 | 14 | ("20050257395" \| "20100024837" \| "20130133682" \| "4629863" \| "4878620" \| "D239243" \| "D243558" \| "D260189" \| "D533306" \| "D538986" \| "D668386" \| "D795317" \| "D819266").PN. OR | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |



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| | | ("D835344").URPN. | | | | |
| S186 | 29 | ("2014/0007449").URPN. | USPAT | OR | ON | 2020/03/24 17:37 |
| S192 | 22 | ("2017/0273425").URPN. | USPAT | OR | ON | 2020/03/24 17:37 |
| S194 | 15 | ("2574130" \| "3059652" \| "3386185" \| "3424176").PN. OR ("3563250").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
| S195 | 7 | ("3386185").URPN. | USPAT | OR | ON | 2020/03/24 17:37 |
| S196 | 7 | ("3386185").URPN. | USPAT | OR | ON | 2020/03/24 17:37 |
| S188 | 48 | ("3860174" \| "3955065" \| "4097722" \| "4232454" \| "4525623" \| "5148512" \| "5157757" \| "5467540" \| "5507103").PN. OR ("5598640").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
| S191 | 8 | (("5494058") or ("20030052115") or ("20010005943") or ("20140140861")).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2020/03/24 17:37 |
| S204 | 412 | 34/96.ccls. not (S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 "l14" S197 S198 S199 S200 S201 S202 S203) | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
| S205 | 521 | 34/97.ccls. not (S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 S185 S197 S198 S199 S200 S201 S202 S203 S204) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/24 17:37 |
| S206 | 115 | 34/98.ccls. not (S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 S185 S197 S198 S199 S200 S201 S202 S203 S204 S205) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/24 17:37 |
| S198 | 244 | d28/10.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
| S199 | 182 | d28/12.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
| S203 | 74 | d28/15.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
| S200 | 285 | d28/18.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
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| S197 | 985 | d32/31.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 17:37 |
| S183 | 24 | ("1385797" \| "1526480" \| "2624350" \| "3265075" \| "3586820" \| "3680565" \| "4003389").PN. OR ("4214597").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 15:46 |
| S184 | 24 | ("1385797" \| "1526480" \| "2624350" \| "3265075" \| "3586820" \| "3680565" \| "4003389").PN. OR ("4214597").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 15:46 |
| S182 | 43 | ("20020092196" \| "20040129289" \| "20070137060" \| "20080041406" \| "20090145002" \| "20090293901" \| "20110198421" \| "20130111777" \| "20130160316" \| "20140144037" \| "20140366910" \| "20150265023" \| "20150265024" \| "20170273421" \| "20170273422" \| "20170273423" \| "3696818" \| "3814898" \| "3835869" \| "3857016" \| "3981313" \| "4197448" \| "4214597" \| "4295283" \| "4430808" \| "4456020" \| "4471791" \| "4827105" \| "4856542" \| "5091630" \| "5212366" \| "5513665" \| "5546674" \| "5661910" \| "5740820" \| "5842286" \| "5868148" \| "6038782" \| "7124763" \| "8122896" \| "8353303").PN. OR ("10085537").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 15:17 |
| S181 | 36 | ("3413984" \| "3835869" \| "3843990" \| "3868495" \| "3871391" \| "3890984" \| "3955065" \| "4291714" \| "4295283" \| "4431012" \| "4502496" \| "4566473" \| "4664132" \| "4692594" \| "4759135" \| "4934855" \| "5012576" \| "5060398" \| "5091630" \| "5373607" \| "5479951" \| "5515874" \| "5765575" \| "D365685" \| "D365686" \| "D366152" \| "D366566" \| "D374776").PN. OR ("5868148").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 15:15 |
| S180 | 16 | ("3981313" \| "5235759" \| "5488783" \| "5546674" \| "5638608" \| "5671547" \| "5715847").PN. OR ("5894849").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/24 15:06 |
| S179 | 4 | (("7581898") or ("d026215")).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2020/03/24 09:47 |
| S178 | 1 | ("2013/0269205").URPN. | USPAT | OR | ON | 2020/03/23 13:41 |
| S161 | 59 | ("0043484" \| "2603062" \| "3797752" \| "4232454" \| "4602146").PN. OR ("5157757").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 13:13 |
| S157 | 35 | ("0056531" \| "0720169" \| "1115057" \| "2335179" \| "2557510" \| "2781047" \| "3105503" \| "3123079" \| "3326495" \| "3623491" \| "3683940" \| "3712310" \| "4141370").PN. OR ("4456020").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 13:13 |



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| S165 | 31 | ("0816897" \| "2713627" \| "3465968" \| "3550285").PN. OR ("3860174").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 13:13 |
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| S173 | 67 | ("10021951" \| "10028574" \| "20140083446" \| "20160166033" \| "20160166035" \| "20160206075" \| "20160206076" \| "20160206077" \| "20160338464" \| "20160338465" \| "20170112256" \| "20170164709" \| "20170273422" \| "20170273425" \| "20170273428" \| "20170273429" \| "20170273431" \| "20180055181" \| "20180055184" \| "4232454" \| "5157757" \| "6460272" \| "6662811" \| "6962159" \| "7096598" \| "9808067" \| "9986810" \| "D256280" \| "D256846" \| "D259665" \| "D277417" \| "D322892" \| "D386816" \| "D398073" \| "D398074" \| "D409796" \| "D425663" \| "D439012" \| "D439701" \| "D448115" \| "D457730" \| "D476443" \| "D506030" \| "D510192" \| "D557017" \| "D609857" \| "D676600" \| "D700018" \| "D754313" \| "D775418" \| "D775419" \| "D776345" \| "D782731" \| "D782732" \| "D782733" \| "D782734" \| "D790785" \| "D791407" \| "D798502" \| "D800454" \| "D810927" \| "D811009" \| "D814130" \| "D815837" \| "D817643" \| "D823004" \| "D823005").PN. OR ("D848068").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 13:13 |
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| S174 | 14 | ("20050257395" \| "20100024837" \| "20130133682" \| "4629863" \| "4878620" \| "D239243" \| "D243558" \| "D260189" \| "D533306" \| "D538986" \| "D668386" \| "D795317" \| "D819266").PN. OR ("D835344").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 13:13 |
| S158 | 29 | ("2014/0007449").URPN. | USPAT | OR | ON | 2020/03/23 13:13 |
| S164 | 22 | ("2017/0273425").URPN. | USPAT | OR | ON | 2020/03/23 13:13 |
| S166 | 15 | ("2574130" \| "3059652" \| "3386185" \| "3424176").PN. OR ("3563250").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 13:13 |
| S167 | 7 | ("3386185").URPN. | USPAT | OR | ON | 2020/03/23 13:13 |
| S168 | 7 | ("3386185").URPN. | USPAT | OR | ON | 2020/03/23 13:13 |
| S160 | 48 | ("3860174" \| "3955065" \| "4097722" \| "4232454" \| "4525623" \| "5148512" \| "5157757" \| "5467540" \| "5507103").PN. OR ("5598640").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 13:13 |
| S163 | 8 | (("5494058") or ("20030052115") or ("20010005943") or ("20140140861")).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2020/03/23 13:13 |
| S176 | 412 | 34/96.ccls. not (S158 S159 S160 S161 S162 S163 S164 S165 S166 S167 S168 "l14" S169 S170 S171 S172 S173 S174 S175) | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 13:13 |
| S177 | 521 | 34/97.ccls. not (S158 S159 S160 S161 S162 S163 S164 S165 S166 S167 S168 S157 S169 S170 S171 S172 S173 S174 S175 S176) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/23 13:13 |
| S170 | 244 | d28/10.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 13:13 |
| S171 | 182 | d28/12.ccls. | US-PGPUB; USPAT; | OR | ON | 2020/03/23 13:13 |



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| | | | USOCR | | | |
| S175 | 74 | d28/15.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 13:13 |
| S172 | 285 | d28/18.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 13:13 |
| S169 | 984 | d32/31.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 13:13 |
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| S155 | 26 | ("0000997" \| "2576368" \| "3066683" \| "3730190" \| "3837581").PN. OR ("3939850").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/23 12:18 |
| S153 | 412 | 34/96.ccls. not (S135 S136 S137 S138 S139 S140 S141 S142 S143 S144 S145 "l14" S146 S147 S148 S149 S150 S151 S152) | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/20 18:54 |
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| S151 | 14 | ("20050257395" \| "20100024837" \| "20130133682" \| "4629863" \| "4878620" \| "D239243" \| "D243558" \| "D260189" \| "D533306" \| "D538986" \| "D668386" \| "D795317" \| "D819266").PN. OR ("D835344").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/20 17:45 |
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|---|---|---|---|---|---|---|
| S149 | 285 | d28/18.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/20 17:14 |
| S148 | 182 | d28/12.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/20 17:09 |
| S147 | 244 | d28/10.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/20 16:57 |
| S146 | 984 | d32/31.ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/20 16:16 |
| S145 | 7 | ("3386185").URPN. | USPAT | OR | ON | 2020/03/20 16:15 |
| S144 | 7 | ("3386185").URPN. | USPAT | OR | ON | 2020/03/20 16:12 |
| S143 | 15 | ("2574130" \| "3059652" \| "3386185" \| "3424176").PN. OR ("3563250").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/20 16:10 |
| S142 | 31 | ("0816897" \| "2713627" \| "3465968" \| "3550285").PN. OR ("3860174").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/20 16:02 |
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| S140 | 8 | (("5494058") or ("20030052115") or ("20010005943") or ("20140140861")).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2020/03/20 15:06 |
| S139 | 68 | ("10021951" \| "10028574" \| "20140083446" \| "20160166033" \| "20160166035" \| "20160206075" \| "20160206076" \| "20160206077" \| "20160338464" \| "20160338465" \| "20170112256" \| "20170164709" \| "20170273422" \| "20170273425" \| "20170273428" \| "20170273429" \| "20170273431" \| "20180055181" \| "20180055184" \| "4232454" \| "5157757" \| "6460272" \| "6662811" \| "6962159" \| "7096598" \| "9808067" \| "9986810" \| "D256280" \| "D256846" \| "D259665" \| "D277417" \| "D294743" \| "D322892" \| "D386816" \| "D398073" \| "D398074" \| "D409796" \| "D425663" \| "D439012" \| "D439701" \| "D448115" \| "D457730" \| "D476443" \| "D506030" \| "D510192" \| "D557017" \| "D609857" \| "D676600" \| "D700018" \| "D754313" \| "D775418" \| "D775419" \| "D776345" \| "D782731" \| "D782732" \| "D782733" \| "D782734" \| "D790785" \| "D791407" \| "D798502" \| "D800454" \| | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/20 15:04 |

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| S137 | 48 | ("3860174" \| "3955065" \| "4097722" \| "4232454" \| "4525623" \| "5148512" \| "5157757" \| "5467540" \| "5507103").PN. OR ("5598640").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/20 12:09 |
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| S134 | 2 | ("20140007449").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2020/03/20 10:36 |
| S133 | 2 | ("20140007448").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2020/03/19 17:34 |
| S132 | 52 | ("2507373" \| "3442271" \| "3563250" \| "3599345" \| "3890984" \| "D109118").PN. OR ("4250902").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/19 17:32 |
| S131 | 26 | ("3922521" \| "3955064" \| "4023578" \| "4192325" \| "4250902" \| "4328818" \| "4365426" \| "4564032" \| "4625738" \| "5212366" \| "5365037" \| "5479951" \| "5584307" \| "D365685" \| "D365686" \| "D366152" \| "D366153" \| "D366566").PN. OR ("5765575").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/19 17:29 |
| S130 | 2 | ("2002/0108264").URPN. | USPAT | OR | ON | 2020/03/19 17:19 |
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|---|---|---|---|---|---|---|
| S129 | 13 | ("3675663" \| "4569360" \| "4576188" \| "4598722" \| "4699159" \| "5286949" \| "5482060" \| "5522408" \| "5901711").PN. OR ("6092534").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2020/03/19 16:57 |
| S128 | 4150 | (hair) and (expand$4 adjust$4) with (diameter barrel mandrel pipe) same2 (heat$4 air steam fluid vapor) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/19 16:23 |
| S127 | 4150 | (hair) and (expand$4 adjust$4) with (diameter barrel mandrel pipe) same2 (heat$4 air steam fluid vapor) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/19 16:19 |
| S126 | 32790 | (hair fan) and (expand$4 adjust$4) with (diameter barrel mandrel pipe) same2 (heat$4 air steam fluid vapor) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2020/03/19 16:12 |
| S123 | 19 | (("1504988") or ("3107675") or ("200701192069")).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2020/03/19 16:08 |
| S122 | 18 | (("1504988") or ("3107875") or ("200701192069")).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | OFF | 2020/03/19 16:07 |

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 14656357 |
| Filing Date | 2015-03-12 |
| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

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| | 1 | 3224454 | A | 1965-12-21 | Quinio et al. | |
| | 2 | 4422464 | A | 1983-12-27 | Josefsson | |
| | 3 | 4602146 | A | 1986-07-22 | Barns et al. | |
| | 4 | 5157757 | A | 1992-10-20 | McDougall | |

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| | 1 | 20030079366 | A1 | 2003-05-01 | Chang | |
| | 2 | 20030177657 | A1 | 2003-09-25 | Andis et al. | |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

| Examiner Initial* | Cite No | Foreign Document Number[3] | Country Code[2] | Kind Code[4] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | T[5] |
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|---|---|---|---|
| | 1 | Mason et al., U.S. Office Action dated February 28, 2020, directed to U.S. Application No. 15/468,502; 17 pages | |

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /christopher gloria/ | Date (YYYY-MM-DD) | 2020-03-03 |
|---|---|---|---|
| Name/Print | Christopher Gloria | Registration Number | 71,907 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 14656357 |
| Filing Date | 2015-03-12 |
| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 2476002 | A | 1949-07-12 | Stalker | |
| | 2 | 3837581 | A | 1974-09-24 | Orsoff | |
| | 3 | 3939850 | A | 1976-02-24 | Wahl | |
| | 4 | 3990460 | A | 1976-11-09 | Shalvoy | |
| | 5 | 5660191 | A | 1997-08-26 | Bontoux et al. | |
| | 6 | 5765575 | A | 1998-06-16 | Denebeim | |
| | 7 | 5894849 | A | 1999-04-20 | Ehlhardt et al. | |
| | 8 | 5966833 | A | 1999-10-19 | Andis et al. | |

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 9 | 6662811 | B2 | 2003-12-16 | Mugge et al. | |
| | 10 | 6668840 | B1 | 2003-12-30 | Mugge et al. | |
| | 11 | 6739071 | B2 | 2004-05-25 | Andis et al. | |
| | 12 | 7631646 | B2 | 2009-12-15 | Ragosta et al. | |
| | 13 | 8092166 | B2 | 2012-01-10 | Nicolas et al. | |
| | 14 | 9752789 | B2 | 2017-09-05 | Staniforth et al. | |
| | 15 | 9982677 | B2 | 2018-05-29 | Beavis et al. | |
| | 16 | 10094392 | B2 | 2018-10-09 | Poulton et al. | |

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|---|---|---|---|---|---|---|
| | 1 | 20100226797 | A1 | 2010-09-09 | Fitton et al. | |

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 2 | 20130008043 | A1 | 2013-01-10 | Correll, JR. et al. | |
| | 3 | 20130104415 | A1 | 2013-05-02 | Han et al. | |
| | 4 | 20130133682 | A1 | 2013-05-30 | Yoe et al. | |
| | 5 | 20130269205 | A1 | 2013-10-17 | Hada | |
| | 6 | 20160356287 | A1 | 2016-12-08 | Khalitov et al. | |
| | 7 | 20170273425 | A1 | 2017-09-28 | Stephens et al. | |

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

**FOREIGN PATENT DOCUMENTS** Remove

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| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

| | | | |
|---|---|---|---|
| | 1 | Heffer et al., U.S. Office Action dated July 2, 2020, directed to U.S. Application No. 15/468,500; 22 pages | |
| | 2 | Maclaine et al., U.S. Office Action dated April 15, 2020, directed to U.S. Application No. 15/656,432; 12 pages | |

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**EXAMINER SIGNATURE**

| Examiner Signature | | Date Considered | |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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|---|---|---|
| | Application Number | 14656357 |
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| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

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**OR**

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See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /christopher gloria/ | Date (YYYY-MM-DD) | 2020-07-14 |
|---|---|---|---|
| Name/Print | Christopher Gloria | Registration Number | 71,907 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 14656357 |
| **Filing Date:** | 12-Mar-2015 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Filer:** | Christopher Elmose Gloria/Yesenia Rivera |
| **Attorney Docket Number:** | 42466-20933.00 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| SUBMISSION- INFORMATION DISCLOSURE STMT | 1806 | 1 | 240 | 240 |
| | | **Total in USD ($)** | | **240** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 40000544 |
| **Application Number:** | 14656357 |
| **International Application Number:** | |
| **Confirmation Number:** | 9085 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Customer Number:** | 25227 |
| **Filer:** | Christopher Elmose Gloria/Yesenia Rivera |
| **Filer Authorized By:** | Christopher Elmose Gloria |
| **Attorney Docket Number:** | 42466-20933.00 |
| **Receipt Date:** | 14-JUL-2020 |
| **Filing Date:** | 12-MAR-2015 |
| **Time Stamp:** | 20:11:15 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $240 |
| RAM confirmation Number | E20207DK11352841 |
| Deposit Account | |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Non Patent Literature | 14656432_2093400_04-15-2020.pdf | 480373<br>3ff4dc4ac460d715e92146e610adc250e57c9064 | no | 12 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Non Patent Literature | 15468500_2111700_07-02-2020.pdf | 894667<br>509adc08e448e9c1c0a08622e375f38bc0501f7f | no | 22 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Information Disclosure Statement (IDS) Form (SB08) | 424662093300_IDS.pdf | 1069480<br>fe1e799a6028aaabc916d194c64974997ef0f900 | no | 6 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Fee Worksheet (SB06) | fee-info.pdf | 30621<br>151deaab7694901e238571e4e68f527f920ff27d | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 2475141 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

Doc Code: AP.PRE.REQ

PTO/AIA/33 (03-13)
Approved for use through 07/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

# PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): 42466-20933.00

I hereby certify that this correspondence is being facsimile transmitted to the USPTO, EFS-Web transmitted to the USPTO, or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]
on August 12, 2020

Signature /dbernecker/

Typed or printed name Donna Bernecker

| Application Number | Filed |
|---|---|
| 14/656,357 | March 12, 2015 |

First Named Inventor: Alasdair Michael MACLAINE

| Art Unit | Examiner |
|---|---|
| 3772 | Jennifer Frances Gill |

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ applicant.

☑ attorney or agent of record. Registration number 71,907.

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

/christopher gloria/
Signature

Christopher Gloria
Typed or printed name

+1 (703) 760-7389
Telephone number

August 12, 2020
Date

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

**ARGUMENTS IN SUPPORT OF PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Appellant respectfully requests review of the Non-Final Rejection dated April 15, 2020, (hereinafter, the "Action"). The claims have been thrice rejected and, therefore, are eligible for appeal. A Notice of Appeal is submitted herewith.

As explained below, the Examiner erred in rejecting the claims as anticipated by Glassman (US-4,214,597) and as anticipated by or obvious over Vicory (US-5,626,156) because these references fail to disclose or suggest that "the outlet . . . is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion" of the attachment, as recited in claim 1.

Claim 1 is directed to an attachment for a hand held appliance that includes, *inter alia*:

> [an] outlet in the cylindrical second portion of the attachment [that] comprises at least one slot extending towards a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a substantially contiguous wall of the attachment and is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion.

Thus, according to claim 1, the outlet is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion.

FIG. 3a of the application, which is reproduced below, is a perspective view of an attachment according to an embodiment of claim 1 and illustrates a fluid outlet (100) that includes at least one slot (102), and FIG. 5b of the application, which is also reproduced below, provides a cross section of a portion of the outlet, according to an embodiment.



SharkNinja Ex. 1002
Page 1909 of 1998

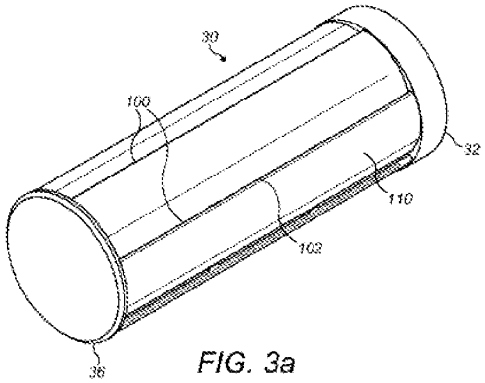



FIG. 3a

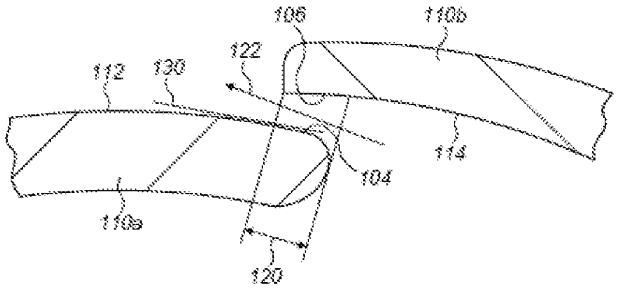
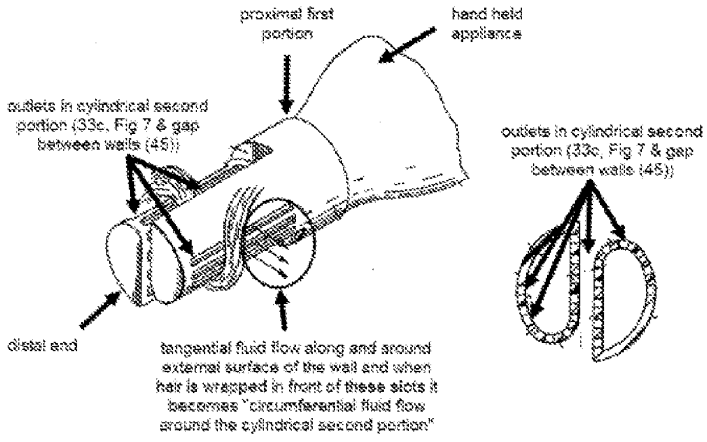



FIG. 5b

The outlet is configured to direct fluid flow (122) emitted from the outlet tangentially (130) along and around the external surface (112) of the substantially contiguous wall (110) to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion. (Published Application at ¶¶ [0091]-[0092].)

The references fail to disclose or suggest that "the outlet . . . is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion" of the attachment, as recited in claim 1.

**A. Glassman:** The Examiner provides an annotation of FIG. 6 of Glassman, which is reproduced here to illustrate the Examiner's mapping. As illustrated, the Examiner relies on slots in the attachment that direct air flow radially outwardly (see circled portion) as disclosing the outlet of claim 1. However, it is readily apparent from FIG. 6 that this radial flow is not "tangentially along and






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around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion," as required by claim 1. The flow from these slots is straight out, perpendicular to the external surface of the attachment. It is not tangential along and around the external surface and does not form a circumferential fluid flow around the cylindrical second portion. Further, this flow would not "encourage[] hair to automatically wrap around the cylindrical second portion," as required by claim 1. Rather, the flow would tend to force the hair radially away from the external surface of the attachment. Thus, Glassman's outlets are clearly incapable of "direct[ing] fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion" of the attachment, as recited in claim 1. In contrast to the explicit requirement in claim 1 for fluid flow that encourages automatic hair wrapping, Glassman teaches manually weaving hair through the attachment. (Glassman, 3:21-26.)

> The Examiner attempts to explain the mapping of Glassman to the claims as follows:
>
> The outlets are configured to direct fluid flow emitted from the outlets tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment when hair is wrapped around it and hair can be encouraged to automatically [wrap] around the cylindrical second portion when it's rotated or when air moves through the attachment.

(Action at 5.) According to the Examiner, then, fluid flows "tangentially along and around the external surface of the substantially contiguous wall [of Glassman's device] to form a circumferential fluid flow around the cylindrical second portion of the attachment *when hair is wrapped around it*." (*Id.* (emphasis added).) Thus, the Examiner does not argue that Glassman's outlet is configured to direct fluid flow circumferentially around the attachment but, rather, that this kind of flow would result from hair *already wrapped around the attachment*. The Examiner appears to recognize that Glassman's outlets are incapable of creating the circumferential fluid flow, relying instead on hair already wrapped around the attachment to redirect the flow to achieve the type of fluid flow required by claim 1. The Examiner is right that Glassman's outlets are incapable of directing the fluid flow required by claim 1. But the Examiner's assertion that hair already wrapped around the attachment is sufficient to cure this deficiency flips the claim on its head. Claim 1 explicitly requires the outlet to be *configured to* direct fluid flow "tangentially along and around the

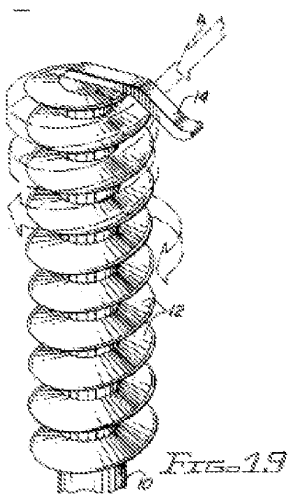


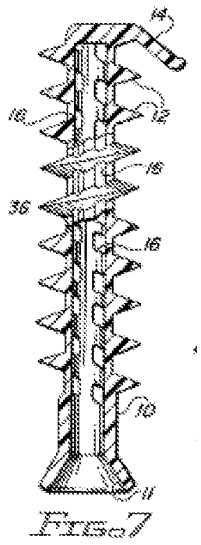
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external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment." Thus, the outlet must be configured to create the circumferential fluid flow. The Examiner's argument is the other way around—that hair already wrapped around the attachment creates the circumferential fluid flow. This is clearly improper.

The Examiner also asserts that "hair can be encouraged to automatically wrap around the cylindrical second portion when it's rotated or when air moves through the attachment." (*Id.*) Dealing first with the second part of this assertion—that hair can be encouraged to automatically wrap when air moves through the attachment—this argument is plainly wrong and not supported by any evidence. The air flow out of the outlets of Glassman is radially outward and, as such, would tend to force air radially away from the attachment, not encourage it to wrap around the attachment. With regard to the first part of the assertion, the Examiner is ignoring what is recited in claim 1. The Examiner asserts that the manual operation of rotating the attachment is "automatically" wrapping. Manual rotation of the device to wrap the hair around the device is the opposite automatically wrapping and is not a result of the air flow "encourage[ing] hair to automatically wrap," as required by claim 1.

**B.** Vicory**:** Vicory suffers a similar deficiency as Glassman. Vicory discloses a "spiral designer curler" (as shown in FIGS. 7 and 19 of Vicory reproduced below) that can be attached to the outlet of a hair dryer. According to Vicory, "[a]fter wet hair . . . is wound on the spiral designer curler of FIGS. 6 through 9 in the manner illustrated in FIG. 19, . . . the dryer 20 is turned on, [and] air flows through the bore 36 into the interior of the tubular body portion 10 of the rod and outwardly through the apertures 16 and through the hair wound on the rod." (Vicory, 5:57-66.) Thus, like Glassman, Vicory teaches a curling device in which a user manually wraps hair around the device and then air flows through the wrapped hair in a radial direction to dry it. There is no






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disclosure of an outlet that directs air flow circumferentially around the attachment to encourage hair to automatically wrap around the attachment, as required by claim 1.

In fact, it is readily apparent that the outlets in Vicory would be incapable of "direct[ing] fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion" of the attachment, as recited in claim 1. FIG. 7 of Vicory is a cross section through the curler and shows the air outlets (apertures16). These outlets 16 would merely direct airflow radially outwardly from the attachment in a manner that would blow hair that isn't tightly wound around the attachment away from the attachment. The outlets would be incapable of causing a tangential air flow "along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion" of the attachment, as recited in claim 1.

Thus, both Glassman and Vicory fail to disclose or suggest that "the outlet . . . is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion" of the attachment, as recited in claim 1. None of the other references cure this deficiency.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. **03-1952** referencing docket no. **42466-20933.00.**

Dated: August 12, 2020

Respectfully submitted,

Electronic signature: /christopher gloria/
Christopher Gloria
Registration No.: 71,907
MORRISON & FOERSTER LLP
1650 Tysons Boulevard, Suite 300
McLean, VA 22102-4220
+1 (703) 760-7389

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 14656357 |
| **Filing Date:** | 12-Mar-2015 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Filer:** | Christopher Elmose Gloria/Donna Bernecker |
| **Attorney Docket Number:** | 42466-20933.00 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| NOTICE OF APPEAL | 1401 | 1 | 800 | 800 |
| **Post-Allowance-and-Post-Issuance:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Extension-of-Time:** | | | | |
| Extension - 1 month with $0 paid | 1251 | 1 | 200 | 200 |
| **Miscellaneous:** | | | | |
| | | **Total in USD ($)** | | **1000** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 40267194 |
| **Application Number:** | 14656357 |
| **International Application Number:** | |
| **Confirmation Number:** | 9085 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Customer Number:** | 25227 |
| **Filer:** | Christopher Elmose Gloria/Donna Bernecker |
| **Filer Authorized By:** | Christopher Elmose Gloria |
| **Attorney Docket Number:** | 42466-20933.00 |
| **Receipt Date:** | 12-AUG-2020 |
| **Filing Date:** | 12-MAR-2015 |
| **Time Stamp:** | 17:30:27 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $1000 |
| RAM confirmation Number | E20208BH30431767 |
| Deposit Account | |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Notice of Appeal Filed | NoticeofAppeal_424662093300.PDF | 213907<br>965f048810b536938259c6d177828f59950769e1 | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Pre-Brief Conference request | PreAppealBriefRequestforReview_424662093300.pdf | 284813<br>a595cfb240971dae439b779a01d89d4941a4452b | no | 6 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Fee Worksheet (SB06) | fee-info.pdf | 32171<br>58c24c8a89a78f80fa8d5dbb48ccaa02a9179864 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 530891 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/AIA/31 (03-14)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

# NOTICE OF APPEAL FROM THE EXAMINER TO THE PATENT TRIAL AND APPEAL BOARD

Docket Number (Optional): 42466-20933.00

I hereby certify that this correspondence is being facsimile transmitted to the USPTO, EFS-Web transmitted to the USPTO, or deposited with the United States Postal Service with sufficient postage in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, on Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on August 12, 2020.

Signature: /dbernecker/

Typed or printed name: Donna Bernecker

In re Application of: Alasdair Michael MACLAINE

| Application Number | Filed |
|---|---|
| 14/656,357 | March 12, 2015 |

For: ATTACHMENT FOR A HAND HELD APPLIANCE

| Art Unit | Examiner |
|---|---|
| 3772 | Jennifer Frances Gill |

Applicant hereby **appeals** to the Patent Trial and Appeal Board from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) $ 800

☐ Applicant asserts small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by 50%, and the resulting fee is: $ _____

☐ Applicant certifies micro entity status. See 37 CFR 1.29. Therefore, the fee shown above is reduced by 75%, and the resulting fee is: $ _____
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 03-1952.

☑ Payment made via EFS-Web.

☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/AIA/22 or equivalent) is enclosed.
For extensions of time in reexamination proceedings, see 37 CFR 1.550.

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

I am the

☐ applicant

☑ attorney or agent of record
Registration number 71,907

☐ attorney or agent acting under 37 CFR 1.34
Registration number _____

Signature: /christopher gloria/

Typed or printed name: Christopher Gloria

Telephone Number: +1 (703) 760-7389

Date: August 12, 2020

**NOTE:** This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☐ * Total of _____ forms are submitted.

This collection of information is required by 37 CFR 41.20(b)(1) and 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

UNITED STATES PATENT AND TRADEMARK OFFICE

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Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 14/656,357 | 03/12/2015 | Alasdair Michael MACLAINE | 42466-20933.00 | 9085 |

25227 7590 09/22/2020

MORRISON & FOERSTER LLP
1650 TYSONS BOULEVARD
SUITE 300
MCLEAN, VA 22102

| EXAMINER | |
|---|---|
| GILL, JENNIFER FRANCES | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3772 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 09/22/2020 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

EOfficeVA@mofo.com
PatentDocket@mofo.com
pair_mofo@firsttofile.com

# Notice of Panel Decision from Pre-Appeal Brief Review

| Application No. | Applicant(s) | |
|---|---|---|
| 14/656,357 | MACLAINE, Alasdair Michael | |
| **Examiner** | **Art Unit** | **AIA (FITF) Status** |
| JENNIFER GILL | 3772 | Yes |

This is in response to the Pre-Appeal Brief Request for Review filed 12 August 2020 .

1. ☐ **Improper Request** - The Request is improper and a conference will not be held for the following reason(s):

☐ The Notice of Appeal has not been filed concurrent with the Pre-Appeal Brief Request.
☐ The request does not include reasons why a review is appropriate.
☐ A proposed amendment is included with the Pre-Appeal Brief request.
☐ Other: _____ .

The time period for filing a response continues to run from the receipt date of the Notice of Appeal or from the mail date of the last Office communication, if no Notice of Appeal has been received.

2. ☑ **Proceed to Board of Patent Appeals and Interferences** - A Pre-Appeal Brief conference has been held. The application remains under appeal because there is at least one actual issue for appeal. Applicant is required to submit an appeal brief in accordance with 37 CFR 41.37. The time period for filing an appeal brief will be reset to be one month from mailing this decision, or the balance of the two-month time period running from the receipt of the notice of appeal, whichever is greater. Further, the time period for filing of the appeal brief is extendible under 37 CFR 1.136 based upon the mail date of this decision or the receipt date of the notice of appeal, as applicable.

☑ The panel has determined the status of the claim(s) is as follows:
Claim(s) allowed: _____ .
Claim(s) objected to: _____ .
Claim(s) rejected: 1, 3, 5, 7-16, and 36-38 .
Claim(s) withdrawn from consideration: 17, 19, 21, and 23-35 .

3. ☐ **Allowable application** - A conference has been held. The rejection is withdrawn and a Notice of Allowance will be mailed. Prosecution on the merits remains closed. No further action is required by applicant at this time.

4. ☐ **Reopen Prosecution** - A conference has been held. The rejection is withdrawn and a new Office action will be mailed. No further action is required by applicant at this time.

All participants:

| | |
|---|---|
| (1) JENNIFER F GILL . | (3) JACQUELINE JOHANAS . |
| (2) TRACI CASLER . | (4) _____ . |

| | | |
|---|---|---|
| /JENNIFER GILL/<br>EXAMINER, Art Unit 3772 | /JACQUELINE T JOHANAS/<br>Supervisory Patent Examiner, Art Unit 3772 | /TRACI CASLER/<br>RQAS, OPQA |



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Page 1920 of 1998

| *Examiner-Initiated Interview Summary* | **Application No.** 14/656,357 | **Applicant(s)** MACLAINE, Alasdair Michael | |
|---|---|---|---|
| | **Examiner** JENNIFER GILL | **Art Unit** 3772 | **AIA (FITF) Status** Yes |

All participants (applicant, applicant's representative, PTO personnel):

(1) JENNIFER GILL. (3) _____.

(2) CHRISTOPHER GLORIA. (4) _____.

Date of Interview: 02 September 2020.

Type: ☑ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
If Yes, brief description: _____.

Issues Discussed ☐ 101 ☐ 112 ☐ 102 ☐ 103 ☐ Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1,3,5,7-16 and 36-38.

Identification of prior art discussed: Glassman (US 4214597) and Vicory (US 5626156).

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

The office indicated that the rejection of claims 1, 3, 5, 7-8, and 36 as anticipated by Glassman would be withdrawn for the appeals board but the rejections under Vicory would be maintained. The office also pointed to Col 5, 60-Col 6, 5 which specifically indicates that a vortex airflow is created by the combination of the slot shapes and the walls of the attachment thereby meeting the claim limitations (see Figs 7, 11 & 18)..

**Applicant recordation instructions:** It is not necessary for applicant to provide a separate record of the substance of interview.

**Examiner recordation instructions**: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

| /JENNIFER GILL/<br>EXAMINER, Art Unit 3772 | /JACQUELINE T JOHANAS/<br>Supervisory Patent Examiner, Art Unit 3772 |
|---|---|

Docket No.: 42466-20933.00

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357

Confirmation No.: 9085

Filed: March 12, 2015

Art Unit: 3772

For: ATTACHMENT FOR A HAND HELD APPLIANCE

Examiner: Jennifer Frances Gill

**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

As required under 37 C.F.R. § 41.37(a), this brief is filed in furtherance of said Notice of Appeal filed in this case on August 12, 2020, and the Notice of Panel Decision from Pre-Appeal Brief Review dated September 22, 2020, the period for response having been extended two months to December 22, 2020.

The Commissioner is authorized to charge the cost of any fees due in connection with the filing of this document to Deposit Account No. **03-1952** referencing docket no. **42466-20933.00**.



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## I. REAL PARTY IN INTEREST

The real party in interest for this appeal is Dyson Technology Limited.

## II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

Appellants are not aware of any other appeals, interferences, or judicial proceedings that will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

## III. SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 is the sole independent claim on appeal. Claim 1 is directed to an attachment for a hand held appliance. (Specification at ¶¶ [0078], [0091]-[0092], FIG. 1a "30"). The attachment (FIG. 1a "30") comprises an inlet (FIG. 1a "40") in a first proximal portion of the attachment, and an outlet (FIG. 1a "100") in a cylindrical second portion of the attachment, with a fluid flow path (FIG. 1b "50") between the inlet and outlet. The outlet comprises at least one slot (FIG. 1a "102") extending towards a distal end of the attachment (FIG. 1a "36") and is at least partially defined by an external surface (FIG. 5b "112") of a substantially contiguous wall (FIG. 5b "110") of the attachment. The outlet is configured to direct fluid flow (FIG. 5b "122") emitted from the outlet tangentially (FIG. 5b "130") along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion. (Specification at ¶ [0091]). The external surface (FIG. 5b "112") of the substantially contiguous wall (FIG. 5b "110") is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot (FIG. 1a "102") to an end of the at least one slot, wherein the distal end of the attachment (FIG. 1a "36") is closed.



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## IV. ARGUMENT

The rejection of claims 1, 3, 5, 7-12, 15-16, and 36-38 under 35 U.S.C. 102(a)(1) as being anticipated by Vicory (US-5,626,156) (hereinafter "Vicory") and the rejection of claims 11-16 under 35 U.S.C. 103 over Vicory in view of Denebeim (US-5,515,874) should be reversed[1] at least for the following 2 reasons:

(A) Vicory fails to disclose or suggest an "outlet in a cylindrical second portion of the attachment … *configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall* to form a circumferential fluid flow around the cylindrical second portion of the attachment"

(B) Vicory fails to disclose or suggest an outlet "configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment *that encourages hair to automatically wrap around the cylindrical second portion*" of the attachment

These reasons are discussed in turn below.

### A. Vicory fails to disclose or suggest an "outlet in a cylindrical second portion of the attachment … *configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall* to form a circumferential fluid flow around the cylindrical second portion of the attachment" as recited in claim 1.

The rejection of claim 1 as anticipated by Vicory should be reversed at least because Vicory fails to disclose or suggest an "outlet in a cylindrical second portion of the attachment… *configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall* to form a circumferential fluid flow around the cylindrical second portion of the attachment" as recited in claim 1.

[1] Claims 13 and 14 are not rejected and, therefore, claims 13 and 14 are believed to include allowable subject matter.

Claim 1 is directed to an attachment for a hand held appliance that is configured to create a circumferential fluid flow around the attachment that encourages hair to automatically wrap around the attachment. The attachment includes, *inter alia*:

> [an] outlet in [a] cylindrical second portion of the attachment [that] comprises at least one slot extending towards a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a substantially contiguous wall of the attachment and is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion.

Thus, claim 1 requires an outlet in a cylindrical second portion of the attachment. The outlet comprises at least one slot and is at least partially defined by an external surface of a substantially contiguous wall of the attachment. The outlet is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion.

An example of an attachment according to claim 1 is illustrated in FIG. 3a of the application, which illustrates an isometric view, and FIG. 5b of the application, which shows a cross sectional view of a portion of the outlet. An annotation of each figure is provided below.

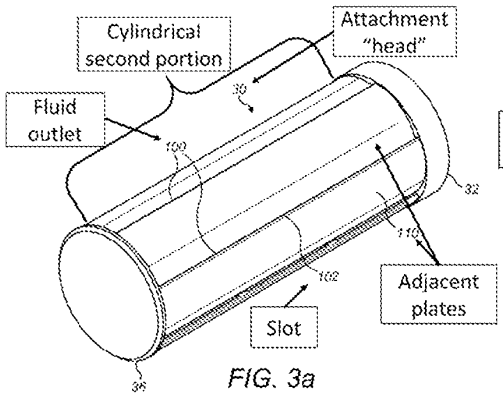



FIG. 3a

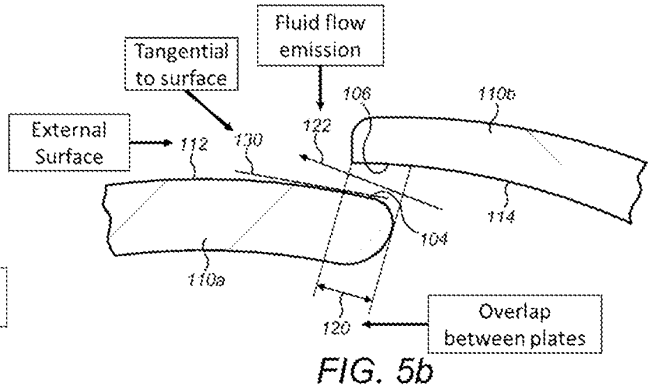



FIG. 5b

In the embodiment of FIG. 3a, the substantially contiguous wall is formed by a series of adjacent plates (110) with a slot (102) that extends along the length of the cylindrical second portion of the attachment head (30) from a first end (32) to a second end (36). (Specification at ¶ [0091].) FIG. 5b illustrates that the slot (102) of FIG. 3a can be created by an overlap (120) between a first plate (110a) and a second plate (110b) which creates an outlet for the fluid flow emission (122) that is at least partially defined by the external surface (112) of the substantially contiguous wall. In the illustrated embodiment, the fluid outlet (100) comprises a number of these slots (102) which are disposed on the attachment head parallel to one another. (*Id.*) As explained in the specification, the fluid flow emission (122) from each slot (102) is tangential (130) to the external surface (112) of the substantially contiguous wall and joins with the fluid flow emission from the other slots to form a circumferential fluid flow around the cylindrical second portion of the attachment. (*Id.*) The circumferential fluid flow around the cylindrical second portion of the attachment encourages any hair that is presented to the attachment to automatically wrap around the cylindrical second portion of the attachment. (*Id.* at ¶¶ [0091], [0078].)

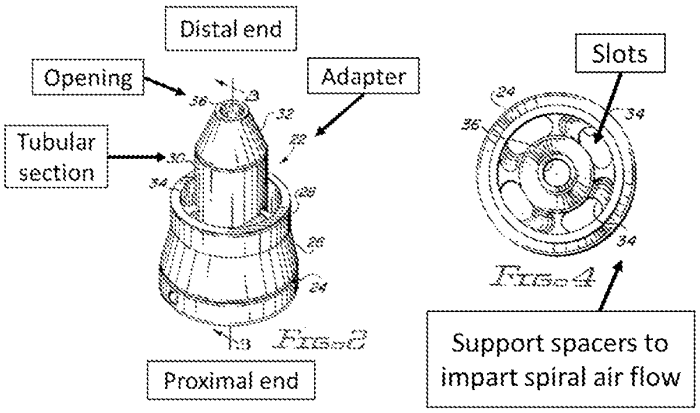
1. *The portion of Vicory cited by the Examiner as disclosing the outlet of claim 1 is not "configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment," as required by claim 1.*

As explained further below, the portion of Vicory relied upon by the Examiner as disclosing the outlet is not "configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment," as required by claim 1.



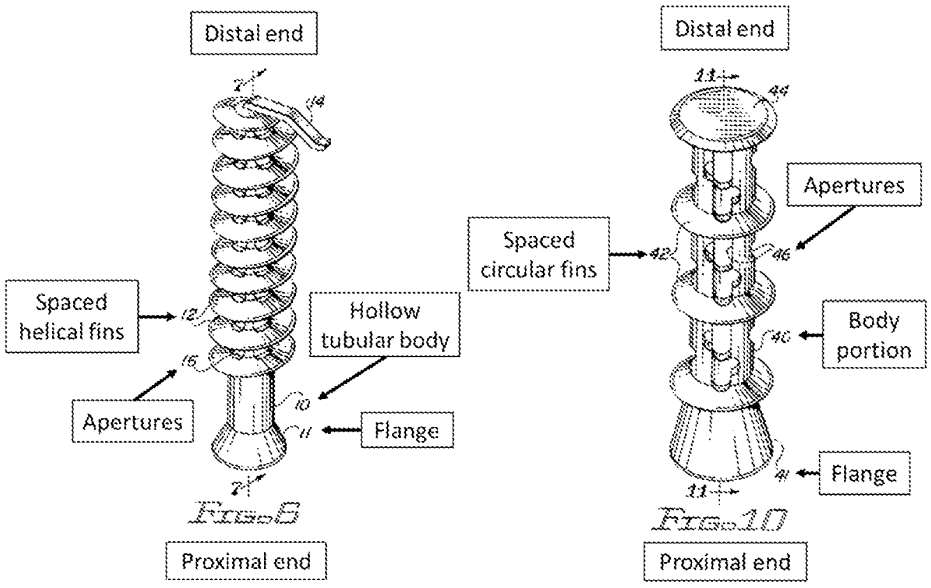
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Vicory is directed to a hair curler for connecting to a hair dryer. The curler includes an adapter that connects to the hair dryer and a "spiral designer curler rod" (hereinafter "curler rod") that connects to the adapter. (Vicory at 5:36-39.) The adapter is shown in the annotations of FIG. 2 and FIG. 4 below.




The adapter (22) has slots between support spacers (34) which form the first of two outlets of the hair curler (hereinafter "the first outlet"). (*Id.* at 5:50-55, 5:63-64, FIG. 4.) The adapter (22) connects directly to the hair dryer and the curler rod connects to the adapter. FIG. 6 and FIG. 10 of Vicory, which are reproduced below with annotations, illustrate curler rods[2] that connect to the adapter (22).

[2] Vicory discloses two suitable attachments and explains the attachments serve the same purpose. (*Vicory* at 6:29-34).




The curler rod has a flange (11, 41) and a hollow tubular body (10, 40). Air flows into the interior of the hollow tubular body (10, 40) of the curler rod through an opening (36) in the adapter (22). (*Id.* at 5:59-64.) A spaced helical or circular fin (12, 42) is located on the external surface of the hollow tubular body (10, 40) and winds substantially along the length of the hollow tubular body (10, 40). (*Id.* 4:34-36.) The hollow tubular body (10, 40) includes apertures (16, 46) that extend towards the distal end of the curler rod and are located on the surface of the hollow tubular body (10, 40) between adjacent turns of the spaced helical or circular fin (12, 40). (*Id.* 4:52-55, 5:63-65.) The apertures (16, 46) form the second of the two outlets of the hair curler (hereinafter "the second outlet"). (*Id.* at 4:54-55, 6:29-31.)

The Examiner relies on the apertures (16, 46) in the hollow tubular body (10, 40) of the curler rod as disclosing the outlet of claim 1. (Non-Final Rejection of Apr. 15, 2020 (hereinafter "Rejection"), at 5.) The Examiner asserts that the apertures (16, 46) disclose an outlet "configured to direct fluid flow emitted from the outlets tangentially along and around the

external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment when hair is wrapped around it." (*Id.*) This is wrong. Air flowing out of the apertures (16, 46) would flow radially outwardly, not "tangentially along and around the external surface of the substantially contiguous wall." This is readily apparent from the shapes of the apertures (16, 46), which simple openings cut into the wall of the hollow tube, as shown in the cross section of FIG. 11 below.

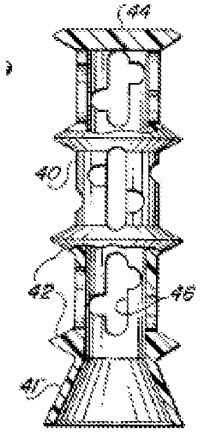



FIG. 11

In fact, Vicory explicitly states that air flows "outwardly" through these apertures. (*Id.* at 5:63-65). This radially outward air flow out of the apertures (16, 46) is indicated by the arrows in FIG. 6 below.

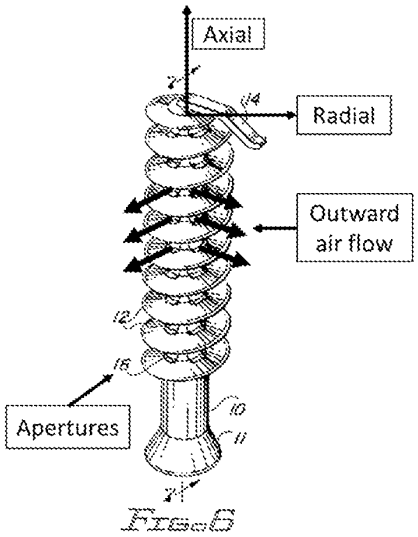


FIG. 6

As shown above, air would flow out of the apertures (16, 46) in a radial direction. The apertures (16, 46) are incapable of directing the fluid flow "tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment," as recited in claim 1. Thus, the apertures (16, 46) fail to disclose or suggest an "outlet in a cylindrical second portion of the attachment… configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment" as required by claim 1.

Apparently recognizing that the outlets are incapable of directing fluid flow as required by claim 1, the Examiner asserts that the apertures (16, 46) form a circumferential fluid flow around the cylindrical second portion of the attachment "*when hair is wrapped around it.*" (Rejection at 5, emphasis added.) Thus, the Examiner does not argue that apertures (16, 46) are capable of forming a circumferential fluid flow, but rather that such a flow results from *hair already wrapped around the attachment*. But whether the Examiner is correct regarding what

the hair would cause the air flow to do, is irrelevant since claim 1 requires the *outlet* to be *configured to* direct fluid flow "tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment." The Examiner's reliance on hair that is already wrapped around the attachment as allegedly creating a circumferential fluid flow fails to establish that the outlet is configured to "direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment," as required by claim 1.

2. *The "vortex" air flow disclosed in Vicory fails to establish disclosure or suggestion of an outlet "configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment."*

In the Examiner-Initiated Interview Summary of September 22, 2020, the Examiner states that the rejection based on Vicory is maintained in view of the Pre-Appeal Brief Conference Request because Vicory discloses a "vortex" air flow. (Examiner-Initiated Interview Summary of September 22, 2020.) As explained below, this vortex air flow is not generated by the apertures (16, 46) that the Examiner relies on as disclosing the outlet of claim 1, and does not disclose or suggest fluid flow emitted "tangentially along and around the external surface of the substantially contiguous wall" as required in claim 1.

The vortex air flow referenced by the Examiner is described in the following paragraph of Vicory:

> When the [adapter] 22 is mounted on the end of a dryer 20, air from the dryer passes out in **a compressed directed airflow through the apertures[3] between**

[3] Vicory uses the terms "apertures" and "slots" interchangeably.

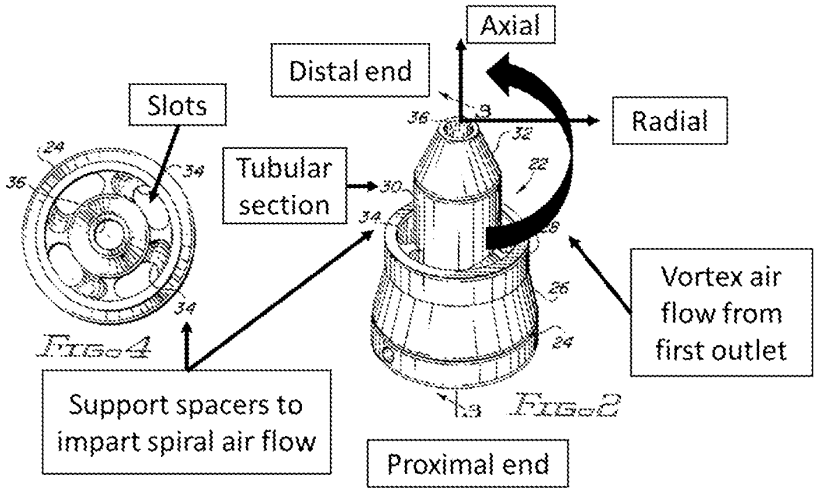


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> **support spacers 34, which impart a spiral air flow over the outside of the tubular section 30**. . . . After wet hair (either with or without styling solutions applied to it) is wound on the spiral designer curler of FIGS. 6 through 9 in the manner illustrated in FIG. 19, the dryer 20, with the coupler 22 attached to it is located to insert the conically tapered section 32 on the end of the coupler 22 into the flange 11 at the bottom of the spiral designer curling rod. **When the dryer 20 is turned on, air flows through the bore 36 into the interior of the tubular body portion 10 of the rod and outwardly through the apertures 16 and through the hair wound on the rod. At the same time, directed heated air passes over the outside of the rod 10-16 to create a twisting vortex air current, which draws in surrounding air over the outside of the hair**. When the inside and outside air currents meet, they cause a convection effect to increase the drying of the hair; and drying is accomplished in a uniform manner throughout the hair which is wound on the tool.

(*Vicory* at 5:50-6:5 (emphasis added).) As explained in this passage, a spiral air flow is created by the apertures between the support spacers 34 in the adapter 22 (not by the apertures 16,19 relied upon by the Examiner) and this spiral air flow "passes over the outside of the rod 10-16 to create a twisting vortex air current, which draws in surrounding air over the outside of the hair." Thus, it is the apertures in the adapter 22 that cause the vortex air flow now cited by the Examiner, not the apertures (16, 49) relied upon for the outlet of claim 1 in the Rejection, and this vortex air flow flows around the outside of hair wound on the attachment, not "tangentially along and around the external surface of the substantially contiguous wall," as recited by claim 1.

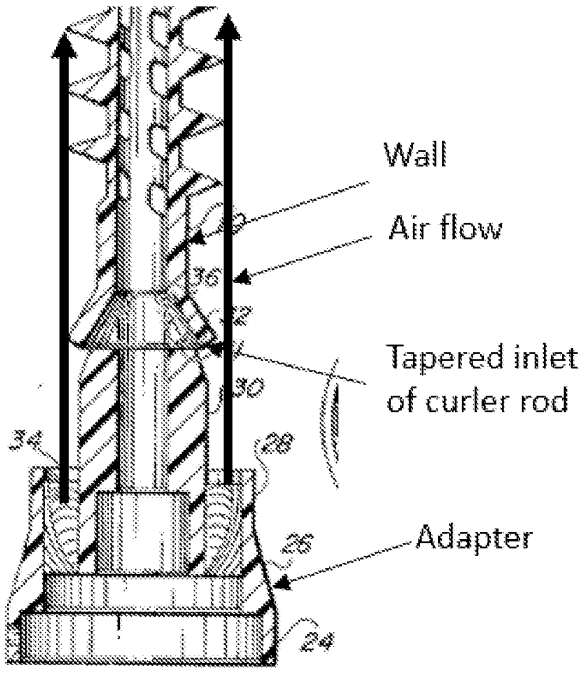
To further illustrate this point, the "vortex" air flow of Vicory is illustrated in the annotations of FIG. 2 and FIG. 4 of Vicory below.




Thus, as shown above, the vortex flow that the Examiner cites in the Interview Summary is created by the first outlet comprising slots in the adapter, and is not created by the second outlet comprising apertures (16, 46) on the curler rod that the Examiner cites in the Rejection as disclosing the outlet of claim 1. Therefore, the presence of a vortex air flow does not overcome the failure of apertures (16, 46) to disclose or suggest an outlet "configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment," as required by claim 1.

Moreover, the vortex air flow does not flow "tangentially along and around the external surface of the substantially contiguous wall" of the attachment. Vicory explains that the vortex air flow from the first outlet passes over the *outside of hair that is wrapped on the attachment* in order to facilitate drying the hair. (*Id.* at 5:66-6:1; 6:62-64.) The Examiner points to the curler rod of FIG. 6 and FIG. 10 as disclosing a substantially contiguous external wall surface of the attachment. (Rejection at 5.) Therefore, Vicory's disclosure that the vortex air flow passes over the outside of the hair demonstrates that this vortex does not flow "tangentially along and around

the external surface of the substantially contiguous wall" of the attachment. Moreover, the apertures in the adapter 22 are radially outward of the wall of the curler rod and, thus, air flow out of the apertures would be radially spaced from the wall of the color rod. The tapered inlet portion of the curler rod is larger in diameter than the wall of the curler rod. The apertures in the adapter 22 would have to be outward of this tapered inlet portion of the curler rod in order to be able to pass the tapered inlet portion. Therefore, the air flow through the apertures in the adapter 22 would necessarily be spaced from the wall of the curler rod. This is shown in the below combination of FIG. 3 and FIG. 7 of Vicory, which represents how the adapter and curler rod would assemble together.




As illustrated in the annotation above, the air flow out of the apertures of the adapter would be radially spaced from the wall of the curler rod relied upon in the Rejection as the "substantially contiguous wall." Since this air flow is the "vortex" air flow of Vicory, it is clear that the vortex

air flow does not flow "tangentially along and around the external surface of the substantially contiguous wall" of the attachment, as required by claim 1.

As demonstrated above, the apertures (16, 46) relied upon by the Examiner as disclosing an "outlet in a cylindrical second portion of the attachment … [that] is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment" are incapable of directing "fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment" and the vortex air flow described in Vicory does not establish that the apertures (16, 46) or any other feature of Vicory are capable of directing fluid flow as required by claim 1. Thus, Vicory fails to disclose or suggest an "outlet in a cylindrical second portion of the attachment… configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment" as recited in claim 1.



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**B. Vicory fails to disclose or suggest an outlet "configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment *that encourages hair to automatically wrap around the cylindrical second portion*" of the attachment as recited in claim 1**

In addition to the reasons discussed above, the rejection of claim 1 as anticipated by Vicory should also be reversed because Vicory fails to disclose or suggest an outlet "configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment *that encourages hair to automatically wrap around the cylindrical second portion*" of the attachment as recited in claim 1.

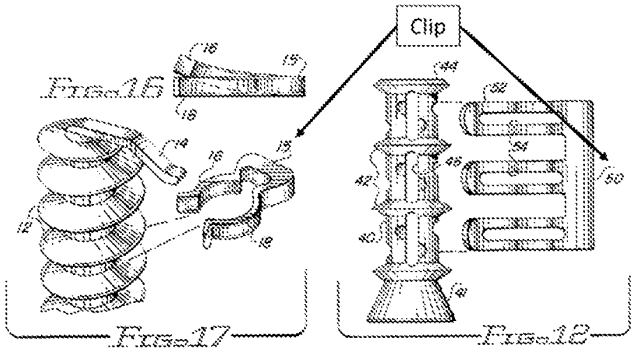
As explained above, claim 1 requires an outlet configured to direct fluid flow emitted tangentially along and around the external surface of the substantially contiguous wall such that the fluid flow emitted tangentially forms a circumferential fluid flow around the cylindrical second portion of the attachment *that encourages hair to automatically wrap around the cylindrical second portion of the attachment*. As explained below, Vicory shows that its attachment is incapable of directing fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment *that encourages hair to automatically wrap around the cylindrical second portion*" of the attachment as required by claim 1.

Vicory teaches that hair is manually wrapped around the attachment before the dryer is turned on. (*Id.* at 5:57-63.) Furthermore, Vicory discloses that this hair is secured with a clip (15, 50). (*Vicory* at 4:67-5:2, 6:36-38.) FIG. 17 and FIG 12 are annotated and reproduced below



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to illustrate the operation of the clip (15, 50) for use with the attachments from FIG. 6 and FIG. 10, respectively.




Vicory explains that the clip (15, 50) is used "to hold hair in the spaces between adjacent fins." (*Vicory* at 4:67-5:2, 6:36-38.) Vicory discloses operation of the hair curler proceeds sequentially: hair is wound on the attachment, the clip is added to hold the hair in the spaces between the fins, and then the dryer is turned on and air flows into the attachment. (*Id.* at 1:16-18, 5:57-63, 6:36-38.) Thus, Vicory states that hair must be wrapped before turning the air flow on and that hair should be kept in place by a clipping system. This shows that the air flowing out of the apertures 16 or 46 of Vicory would blow the hair away from the attachment. To keep the hair in place, Vicory requires wrapping and clipping the hair to the device before turning the air flow on to prevent hair from blowing away from the attachment. This is further proof that Vicory does not have an air outlet "configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment *that encourages hair to automatically wrap around the cylindrical second portion*" of the attachment as required by claim 1.

With respect to the requirement that the outlet be configured such that hair automatically wraps around the cylindrical second portion of the attachment, the Examiner argues that "hair can be encouraged to automatically warp [sic] around the cylindrical second portion when it's rotated or when air moves through the attachment." (Rejection at 5.) This argument is flawed in two respects.

First, the Examiner's assertion that a device wherein hair is "encouraged to automatically warp [sic] around the cylindrical second portion *when it's rotated*" is nonsensical since (a) *manually* rotating the attachment, as argued by the Examiner, is the opposite of encouraging hair to *automatically* wrap around the cylindrical portion, as required by claim 1, and (b) a user rotating the attachment to wrap the hair has nothing to do with the outlet being configured to direct air flow that encourages hair to automatically wrap around the cylindrical second portion. Thus, the Examiner's reliance on manual rotation of the attachment of Vicory fails to disclose or suggest an outlet "configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment *that encourages hair to automatically wrap around the cylindrical second portion*" of the attachment, as required by claim 1.

Second, the Examiner's assertion that apertures 16 or 46 from Vicory are configured such that hair is "encouraged to automatically warp [sic] around the cylindrical second portion … *when air moves through the attachment*" is plainly wrong and not supported by any evidence. (*Id.*, emphasis added.) As explained above, apertures 16 or 46 emit air radially outwardly. Vicory teaches wrapping hair before turning air flow on and using a clip 15, 50 to prevent hair



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from being blown away from the attachment. Thus, when air moves through the attachment per the Examiner's argument, the air tends to push the hair away from its pre-wrapped position which is only kept in place by the clipping system. This shows that, if anything, the air flow would tend to push the hair away from a wrapped position. In any case, there is simply no evidence that the fluid flow emission from an outlet comprised of apertures 16 or 46 would encourage hair to automatically wrap around the attachment, as required by claim 1.

Thus, Vicory does not disclose an outlet "configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment *that encourages hair to automatically wrap around the cylindrical second portion*" of the attachment as required by claim 1.

Accordingly, for the reasons provided above, the rejection of claim 1 as anticipated by Vicory should be withdrawn. The rejections of dependent claims 3, 5, 7-16 and 36-38 should be reversed at least because each of these claims is dependent upon claim 1 and requires the features discussed above.



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## V. CONCLUSION

For at least the foregoing reasons, Appellant respectfully requests reversal of the rejection of claims 1, 3, 5, 7-16, and 36-38.

Dated: December 22, 2020

Respectfully submitted,

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**APPENDIX A**

1. An attachment for a hand held appliance comprising an inlet in a proximal first portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending towards a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a substantially contiguous wall of the attachment and is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion of the attachment that encourages hair to automatically wrap around the cylindrical second portion, wherein the external surface of the substantially contiguous wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot, and wherein the distal end of the attachment is closed.

3. The attachment of claim 1, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

5. The attachment of claim 1, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the external surface of the attachment.

7. The attachment of claim 1, wherein the outlet comprises two slots.

8. The attachment of claim 1, wherein the attachment has a longitudinal axis and the at least one slot is parallel to the longitudinal axis.

9. The attachment of claim 1, wherein the attachment has a longitudinal axis and the at least one slot is non-parallel to the longitudinal axis.



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10. The attachment of claim 9, wherein the at least one slot is helical with respect to the longitudinal axis.

11. The attachment of claim 1, further comprising a flow directing element between the inlet and the outlet.

12. The attachment of claim 11, wherein the flow directing element comprises a perforated layer.

13. The attachment of claim 12, wherein the perforated layer is formed from a mesh or weave of an elongate material.

14. The attachment of claim 12, wherein the perforated layer is formed from a mesh or a weave of elongate wire.

15. The attachment of claim 12, wherein the flow directing element extends substantially along a length of the at least one slot.

16. The attachment of claim 12, wherein the flow directing element extends substantially around an inner circumference of the attachment.

36. The appliance of claim 1, wherein the wall comprises a plurality of plates.

37. The appliance of claim 1, wherein the at least one slot is formed by a gap between adjacent sections of the wall that are joined by at least one spacer disposed between the beginning of the at least one slot and the end of the at least one slot to maintain the gap.

38. The appliance of claim 37, wherein the at least one spacer extends from an edge of a first section of the adjacent sections of the wall to an edge of a second section of the adjacent sections of the wall.



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# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 14656357 |
| **Filing Date:** | 12-Mar-2015 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Filer:** | Christopher Elmose Gloria/Yesenia Rivera |
| **Attorney Docket Number:** | 42466-20933.00 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| Extension - 2 months with $0 paid | 1252 | 1 | 640 | 640 |
| **Miscellaneous:** | | | | |
| | | **Total in USD ($)** | | **640** |

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| **EFS ID:** | 41466877 |
| **Application Number:** | 14656357 |
| **International Application Number:** | |
| **Confirmation Number:** | 9085 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Customer Number:** | 25227 |
| **Filer:** | Christopher Elmose Gloria/Yesenia Rivera |
| **Filer Authorized By:** | Christopher Elmose Gloria |
| **Attorney Docket Number:** | 42466-20933.00 |
| **Receipt Date:** | 22-DEC-2020 |
| **Filing Date:** | 12-MAR-2015 |
| **Time Stamp:** | 17:33:46 |
| **Application Type:** | Utility under 35 USC 111(a) |

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| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Fee Worksheet (SB06) | fee-info.pdf | 30622<br>290ba9f9f65bf6ca7a7405d42b804a4457e0550e | no | 2 |
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Alexandria, Virginia 22313-1450
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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 14/656,357 | 03/12/2015 | Alasdair Michael MACLAINE | 42466-20933.00 | 9085 |

25227 7590 02/02/2021

MORRISON & FOERSTER LLP
2100 L STREET, NW
SUITE 900
WASHINGTON, DC 20037

| EXAMINER | |
|---|---|
| GILL, JENNIFER FRANCES | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3772 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 02/02/2021 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

EOfficeVA@mofo.com
PatentDocket@mofo.com
pair_mofo@firsttofile.com

| *Examiner-Initiated Interview Summary* | Application No. 14/656,357 | Applicant(s) MACLAINE, Alasdair Michael | | |
|---|---|---|---|---|
| | Examiner JENNIFER GILL | Art Unit 3772 | AIA (First Inventor to File) Status Yes | Page 1 of 1 |

| All Participants (applicant, applicants representative, PTO personnel) | Title | Type |
|---|---|---|
| JENNIFER GILL | Examiner | Telephonic |
| CHRISTOPHER GLORIA | Attorney of Record | |

**Date of Interview:** 28 January 2021

**Issues Discussed:**

**35 U.S.C. 102**

The office suggested amending the claims to define that the attachment is formed by a plurality of imperforate plates spaced circumferentially around a longitudinal axis of the attachment with a series of longitudinal slots defined by a direct overlap between the plurality of plates to overcome the rejection with Vicory.
The office suggested amending the claims to recite that the device is "a hair curler configured for attachment to a handheld haircare appliance" in order to help avoid a rejection with Fitton. The office suggested adding language that the attachment has a collar at one end and the plurality of plates extend along the longitudinal axis from the collar to an opposite closed distal end and the plates extend circumferentially around the longitudinal axis to form a cylindrical shape and that the attachment is configured such that hair automatically wraps around the cylindrical attachment in use via the series of longitudinal circumferentially spaced slots between the plurality of plates.

| /JENNIFER GILL/<br>EXAMINER, Art Unit 3772 | /YOGESH P PATEL/<br>Primary Examiner, Art Unit 3772 |
|---|---|

**Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04**
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

**Applicant recordation instructions:** It is not necessary for applicant to provide a separate record of the substance of interview.

**Examiner recordation instructions:** Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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# NOTICE OF ALLOWANCE AND FEE(S) DUE

25227 7590 05/10/2021

MORRISON & FOERSTER LLP
2100 L STREET, NW
SUITE 900
WASHINGTON, DC 20037

| EXAMINER | |
|---|---|
| GILL, JENNIFER FRANCES | |
| ART UNIT | PAPER NUMBER |
| 3772 | |

DATE MAILED: 05/10/2021

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 14/656,357 | 03/12/2015 | Alasdair Michael MACLAINE | 42466-20933.00 | 9085 |

TITLE OF INVENTION: ATTACHMENT FOR A HAND HELD APPLIANCE

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $1200 | $0.00 | $0.00 | $1200 | 08/10/2021 |

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

**HOW TO REPLY TO THIS NOTICE:**

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.**





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## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

25227 7590 05/10/2021
MORRISON & FOERSTER LLP
2100 L STREET, NW
SUITE 900
WASHINGTON, DC 20037

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

| (Typed or printed name) |
|---|
| (Signature) |
| (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 14/656,357 | 03/12/2015 | Alasdair Michael MACLAINE | 42466-20933.00 | 9085 |

TITLE OF INVENTION: ATTACHMENT FOR A HAND HELD APPLIANCE

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $1200 | $0.00 | $0.00 | $1200 | 08/10/2021 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| GILL, JENNIFER FRANCES | 3772 | 132-271000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



PTOL-85 Part B (08-18) Approved for use through 01/31/2020 OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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25227 7590 05/10/2021

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| EXAMINER | |
|---|---|
| GILL, JENNIFER FRANCES | |
| **ART UNIT** | **PAPER NUMBER** |
| 3772 | |

DATE MAILED: 05/10/2021

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.





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## OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

| Notice of Allowability | Application No. 14/656,357 | Applicant(s) MACLAINE, Alasdair Michael | |
|---|---|---|---|
| | Examiner JENNIFER GILL | Art Unit 3772 | AIA (FITF) Status Yes |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--***

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to appeal brief filed 12/22/20 & interview 4/9/21.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1,3,5,7-17,19,21 and 23-38 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   **Certified copies:**

   a) ☑ All  b) ☐ Some  *c) ☐ None of the:

   1. ☑ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 7/14/20.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☑ Interview Summary (PTO-413), Paper No./Mail Date. 4/9/21.
5. ☑ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

| /JENNIFER GILL/<br>EXAMINER, Art Unit 3772 | /YOGESH P PATEL/<br>Primary Examiner, Art Unit 3772 |
|---|---|

## DETAILED ACTION

### *Information Disclosure Statement*

The information disclosure statement(s) (IDS) submitted on 7/14/20 was/were filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement(s) has/have been considered by the examiner.

### *Election/Restrictions*

**Claim(s) 1, 3, 5, 7-16, and 36-38 (as amended below) is/are allowable**. The restriction requirement between the appliance and attachment combination and the attachment, as set forth in the Office action mailed on 9/16/16, has been reconsidered in view of the allowability of claims to the elected invention pursuant to MPEP § 821.04(a). **The restriction requirement is hereby withdrawn as to any claim that requires all the limitations of an allowable claim. Claim(s) 17, 19, 21, and 23-35**, directed to the appliance in combination with the attachment of claim 1 is no longer withdrawn from consideration because the claim(s) requires all the limitations of an allowable claim.

In view of the above noted withdrawal of the restriction requirement, applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See In re Ziegler, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

**EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with Christopher Gloria on 4/9/21.

The application has been amended as follows:

**Claim 1**:

Line 4-5: replace "towards a distal" with ---continuously from the proximal first portion to a distal---.

Line 11: replace "a length" with ---an entire length---.

**Claim 17**:

Line 2: replace "handle inlet" with ---a handle inlet---.

Line 6-7: replace "towards a distal" with ---continuously from the proximal first portion to a distal---.

Line 12: replace "the wall" with ---the substantially contiguous wall---.

Line 12: replace "a length" with ---an entire length---.

**Claims 36-38**:

Line 1: replace "The appliance of claim" with ---The attachment of claim---.

***Allowable Subject Matter***

**Claim(s) 1, 3, 5, 7-17, 19, 21, and 23-38**, as amended above, is/are allowed.

***Reasons for Allowance***

The following is an examiner's statement of reasons for allowance:

The claims in the instant invention have not been rejected using prior art because no references, or reasonable combination thereof, could be found which disclose or, in combination, make obvious the invention set forth in **claims 1 and 17**. No prior art of record discloses or, in combination, makes obvious the attachment comprising an inlet at a proximal first portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending continuously from the proximal first portion to a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a substantially contiguous wall of the attachment and is configured to direct fluid flow emitted from the outlet tangentially along and around the external surface of the substantially contiguous wall to form a circumferential fluid flow around the cylindrical second portion, wherein the external surface of the substantially contiguous wall is an outermost surface of the attachment along an entire length of the attachment from a beginning of the at least one slot to an end of the at least one slot, and wherein the distal end of the attachment is closed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

## ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER GILL whose telephone number is (571)270-1797. The examiner can normally be reached on Mon-Thurs 10am-6pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacqueline Johanas can be reached on 571-270-5085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JENNIFER GILL/
EXAMINER, Art Unit 3772
/YOGESH P PATEL/
Primary Examiner, Art Unit 3772

| *Examiner-Initiated Interview Summary* | Application No. 14/656,357 | Applicant(s) MACLAINE, Alasdair Michael | | |
|---|---|---|---|---|
| | Examiner JENNIFER GILL | Art Unit 3772 | AIA (First Inventor to File) Status Yes | Page 1 of 1 |

| All Participants (applicant, applicants representative, PTO personnel) | Title | Type |
|---|---|---|
| JENNIFER GILL | Examiner | Telephonic |
| CHRISTOPHER GLORIA | Attorney of Record | |

**Date of Interview:** 09 April 2021

**Issues Discussed:**

**Other**

Applicant's representative authorized the attached examiner's amendment to place the application in condition for allowance.

| /JENNIFER GILL/<br>EXAMINER, Art Unit 3772 | /YOGESH P PATEL/<br>Primary Examiner, Art Unit 3772 |
|---|---|

**Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04**
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

**Applicant recordation instructions:** It is not necessary for applicant to provide a separate record of the substance of interview.

**Examiner recordation instructions:** Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.



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Page 1959 of 1998

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 14/656,357 | MACLAINE, Alasdair Michael |
| | Examiner | Art Unit |
| | JENNIFER GILL | 3772 |

| CPC - Searched* | | |
|---|---|---|
| **Symbol** | **Date** | **Examiner** |
| A45D 1/02, 2/06, 2/10, 2/125, 2/127, 2/14, 2/24, 2/2407, 2/2414, 2/2421, 2/245, 2/2457, 2/2485, 2/2492, 20/10, 20/122, 20/124, 20/50 | 1/25-2/3/17 | JG |
| A46B 9/023, 15/003 | 1/25-2/3/17 | JG |
| A45D2/12, 2/22, 2/2464, 20/12, 4/04, 4/08, 4/12, 6/02, 7/02 | 3/19-3/25/20 | JG |
| updated search | 3/19-3/25/20 | JG |

| CPC Combination Sets - Searched* | | |
|---|---|---|
| **Symbol** | **Date** | **Examiner** |
| | | |

| US Classification - Searched* | | | |
|---|---|---|---|
| **Class** | **Subclass** | **Date** | **Examiner** |
| 132 | 210, 211, 227, 268 | 3/19-3/25/20 | JG |
| 219 | 226 | 3/19-3/25/20 | JG |
| 34 | 96-99 | 3/19-3/25/20 | JG |
| D28 | 10, 12, 15, 18 | 3/19-3/25/20 | JG |
| D32 | 31 | 3/19-3/25/20 | JG |

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

| /JENNIFER GILL/<br>EXAMINER | /YOGESH P PATEL/<br>Primary Examiner, Art Unit 3772 |
|---|---|

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 14/656,357 | MACLAINE, Alasdair Michael |
| | Examiner | Art Unit |
| | JENNIFER GILL | 3772 |

| Search Notes | | |
|---|---|---|
| **Search Notes** | **Date** | **Examiner** |
| 132.CLAS (WITH TEXT SEE EAST HISTORY) | 1/25-2/3/17 | JG |
| USPC SEARCH WITH TEXT | 1/25-2/3/17 | JG |
| CPC SEARCH | 1/25-2/3/17 | JG |
| INVENTOR SEARCH | 1/25-2/3/17 | JG |
| ASSIGNEE SEARCH | 1/25-2/3/17 | JG |
| TEXT SEARCH (SEE EAST HISTORY) | 1/25-2/3/17 | JG |
| NPL SEARCH | 1/25-2/3/17 | JG |
| CONSULT WITH KIM SANG OF USPC 242 | 1/25-2/3/17 | JG |
| A45D 1/02, 2/06, 2/10, 2/125, 2/127, 2/14, 2/24, 2/2407, 2/2414, 2/ 2421, 2/245, 2/2457, 2/2485, 2/2492, 20/10, 20/122, 20/124, 20/50 | 1/25-2/3/17 | JG |
| A46B 9/023, 15/003 | 1/25-2/3/17 | JG |
| updated search notes | 7/31-8/3/17 | jg |
| updated search notes | 12/29/17-1/2/18 | jg |
| updated search | 7/23-7/29/19 | JG |
| A45D2/12, 2/22, 2/2464, 20/12, 4/04, 4/08, 4/12, 6/02, 7/02 | 3/19-3/25/20 | JG |
| updated search | 3/19-3/25/20 | JG |
| 132/210, 211, 227, 268 | 3/19-3/25/20 | JG |
| 219/226 | 3/19-3/25/20 | JG |
| 34/96-99 | 3/19-3/25/20 | JG |
| D28/10, 12, 15, 18 | 3/19-3/25/20 | JG |
| D32/31 | 3/19-3/25/20 | JG |
| updated search | 04/12/2021 | JG |

| Interference Search | | | |
|---|---|---|---|
| **US Class/CPC Symbol** | **US Subclass/CPC Group** | **Date** | **Examiner** |
| A45D | 20/50 w/text | 4/12/21 | JG |

| | |
|---|---|
| /JENNIFER GILL/<br>EXAMINER | /YOGESH P PATEL/<br>Primary Examiner, Art Unit 3772 |



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| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 14/656,357 | MACLAINE, Alasdair Michael |
| | **Examiner** | **Art Unit** |
| | JENNIFER GILL | 3772 |

| CPC | | | | | | |
|---|---|---|---|---|---|---|
| **Symbol** | | | | | **Type** | **Version** |
| A45D | / | 20 | / | 50 | F | 2013-01-01 |
| A46B | / | 9 | / | 023 | I | 2013-01-01 |
| A45D | / | 20 | / | 12 | I | 2013-01-01 |
| A46B | / | 15 | / | 003 | I | 2013-01-01 |

| CPC Combination Sets | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Symbol** | | | | | **Type** | **Set** | **Ranking** | **Version** |
| | / | | / | | | | | |

| | | | |
|---|---|---|---|
| /JENNIFER GILL/<br>EXAMINER, Art Unit 3772 | 12 April 2021 | **Total Claims Allowed:** | |
| (Assistant Examiner) | (Date) | 32 | |
| /YOGESH P PATEL/<br>Primary Examiner, Art Unit 3772 | 17 April 2021 | O.G. Print Claim(s) | O.G. Print Figure |
| (Primary Examiner) | (Date) | 1 | FIG 8A |

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SharkNinja Ex. 1002
Page 1962 of 1998

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 14/656,357 | MACLAINE, Alasdair Michael |
| | Examiner | Art Unit |
| | JENNIFER GILL | 3772 |

| INTERNATIONAL CLASSIFICATION | | | | |
|---|---|---|---|---|
| CLAIMED | | | | |
| A45D | / | 20 | / | 50 |

| NON-CLAIMED | | | | |
|---|---|---|---|---|
| | / | | / | |

| US ORIGINAL CLASSIFICATION | |
|---|---|
| CLASS | SUBCLASS |
| | |

| CROSS REFERENCES(S) | | | | | | |
|---|---|---|---|---|---|---|
| CLASS | SUBCLASS (ONE SUBCLASS PER BLOCK) | | | | | |
| | | | | | | |

| /JENNIFER GILL/<br>EXAMINER, Art Unit 3772 | 12 April 2021 | Total Claims Allowed: | |
|---|---|---|---|
| (Assistant Examiner) | (Date) | 32 | |
| /YOGESH P PATEL/<br>Primary Examiner, Art Unit 3772 | 17 April 2021 | O.G. Print Claim(s) | O.G. Print Figure |
| (Primary Examiner) | (Date) | 1 | FIG 8A |

U.S. Patent and Trademark Office — Part of Paper No.: 20210316



SharkNinja Ex. 1002
Page 1963 of 1998

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 14/656,357 | MACLAINE, Alasdair Michael |
| | Examiner | Art Unit |
| | JENNIFER GILL | 3772 |

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

**CLAIMS**

| Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 7 | 10 | 18 | 19 | 25 | 28 | 15 | 37 | | | | | | |
| - | 2 | 8 | 11 | - | 20 | 26 | 29 | 16 | 38 | | | | | | |
| 2 | 3 | 9 | 12 | 19 | 21 | 28 | 30 | | | | | | | | |
| - | 4 | 10 | 13 | - | 22 | 27 | 31 | | | | | | | | |
| 3 | 5 | 11 | 14 | 20 | 23 | 29 | 32 | | | | | | | | |
| - | 6 | 12 | 15 | 21 | 24 | 30 | 33 | | | | | | | | |
| 4 | 7 | 13 | 16 | 22 | 25 | 31 | 34 | | | | | | | | |
| 5 | 8 | 17 | 17 | 23 | 26 | 32 | 35 | | | | | | | | |
| 6 | 9 | - | 18 | 24 | 27 | 14 | 36 | | | | | | | | |

| | | | |
|---|---|---|---|
| /JENNIFER GILL/<br>EXAMINER, Art Unit 3772<br>(Assistant Examiner) | 12 April 2021<br>(Date) | **Total Claims Allowed:**<br>32 | |
| /YOGESH P PATEL/<br>Primary Examiner, Art Unit 3772<br>(Primary Examiner) | 17 April 2021<br>(Date) | O.G. Print Claim(s)<br>1 | O.G. Print Figure<br>FIG 8A |

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 14656357 |
| Filing Date | 2015-03-12 |
| First Named Inventor | Alasdair Michael MACLAINE |
| Art Unit | 3772 |
| Examiner Name | Jennifer Frances Gill |
| Attorney Docket Number | 42466-20933.00 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 2476002 | A | 1949-07-12 | Stalker | |
| | 2 | 3837581 | A | 1974-09-24 | Orsoff | |
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| | 8 | 5966833 | A | 1999-10-19 | Andis et al. | |



ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

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|---|---|---|---|---|---|---|
| | 9 | 6662811 | B2 | 2003-12-16 | Mugge et al. | |
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|---|---|---|---|---|---|---|
| | 1 | 20100226797 | A1 | 2010-09-09 | Fitton et al. | |



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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
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| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

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| | 7 | 20170273425 | A1 | 2017-09-28 | Stephens et al. | |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 14656357 |
| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

| | | | |
|---|---|---|---|
| | 1 | Heffer et al., U.S. Office Action dated July 2, 2020, directed to U.S. Application No. 15/468,500; 22 pages | |
| | 2 | Maclaine et al., U.S. Office Action dated April 15, 2020, directed to U.S. Application No. 15/656,432; 12 pages | |

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**EXAMINER SIGNATURE**

| Examiner Signature | /JENNIFER GILL/ | Date Considered | 03/16/2021 |
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



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|---|---|---|
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| | Filing Date | 2015-03-12 |
| | First Named Inventor | Alasdair Michael MACLAINE |
| | Art Unit | 3772 |
| | Examiner Name | Jennifer Frances Gill |
| | Attorney Docket Number | 42466-20933.00 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /christopher gloria/ | Date (YYYY-MM-DD) | 2020-07-14 |
|---|---|---|---|
| Name/Print | Christopher Gloria | Registration Number | 71,907 |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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## PE2E SEARCH - Search History (Prior Art)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | British Equivalents | Time Stamp |
|---|---|---|---|---|---|---|---|
| L1 | 78 | ("20030079366"\|"20030177657"\|"20130008043"\|"20130104415"\|"20130269205"\|"20140007448"\|"20170273425"\|"3224454"\|"3837581"\|"3939850"\|"4422464"\|"4602146"\|"5157757"\|"5515874"\|"5626156"\|"5765575"\|"5894849").PN. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/10/20 11:10 AM |
| L2 | 18 | ("20030079366"\|"20030177657"\|"20130008043"\|"20130104415"\|"20130269205"\|"20140007448"\|"20170273425"\|"3224454"\|"3837581"\|"3939850"\|"4422464"\|"4602146"\|"5157757"\|"5515874"\|"5626156"\|"5765575"\|"5894849").PN. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/10/20 11:10 AM |
| L3 | 3 | ("2013/0008043").urpn. AND (PGPB \| USPT \| USOC).dbnm. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/10/20 11:10 AM |
| L4 | 2 | 20150265024.pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 10:12 AM |
| L5 | 2 | 20100226797.pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 10:12 AM |
| L6 | 7631 | a45d1/04.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 10:12 AM |
| L7 | 10 | (20110204606 4456020 4260871).pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 10:12 AM |
| L8 | 10 | (20110203606 4456020 4260871).pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 10:12 AM |
| L9 | 3247 | a45d20/10.cpc. NOT (L6) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 10:12 AM |
| L10 | 6078 | a45d20/12.cpc. NOT (L6 L9 L8 ) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 11:12 AM |
| L11 | 6078 | a45d20/12.cpc. NOT (L6 L9 L8) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 11:12 AM |
| L12 | 879 | a45d20/122.cpc. NOT (L6 L9 L8 L11) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 11:12 AM |

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|---|---|---|---|---|---|---|---|
| L13 | 397 | a45d2001/008.cpc. NOT (L6 L9 L8 L11) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 11:12 AM |
| L14 | 397 | a45d2001/008.cpc. NOT (L6 L9 L8 L11 L12) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 11:12 AM |
| L15 | 475 | a45d2/362.cpc. NOT (L6 L9 L8 L11 L12) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 11:12 AM |
| L16 | 551 | a45d2/367.cpc. NOT (L6 L9 L8 L11 L12 L14 L15) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 12:12 PM |
| L17 | 275 | a45d2/2407.cpc. NOT (L6 L9 L8 L11 L12 L14 L15 L16) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 12:12 PM |
| L18 | 4 | 6161553.pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 01:12 PM |
| L19 | 5 | 6092534.pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 01:12 PM |
| L20 | 13 | ("3675663" \| "4569360" \| "4576188" \| "4598722" \| "4699159" \| "5286949" \| "5482060" \| "5522408" \| "5901711").pn. OR ("6092534").urpn. AND (PGPB \| USPT \| USOC).dbnm. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/12/07 01:12 PM |
| L21 | 164 | a45d2/02.cpc. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/12/07 01:12 PM |
| L22 | 795 | a45d2/02.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 01:12 PM |
| L23 | 538 | a45d2/122.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 01:12 PM |
| L24 | 338 | a45d2/125.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 01:12 PM |
| L25 | 223 | a45d2/127.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 01:12 PM |
| L26 | 1086 | a45d7/00.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L27 | 284 | a45d2006/005.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |

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| L28 | 854 | a45d6/00.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L29 | 622 | a45d6/02.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L30 | 389 | a45d2/08.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L31 | 231 | a45d2/06.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L32 | 128 | a45d2/04.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L33 | 254 | a45d2/22.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L34 | 845 | a45d2/18.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L35 | 142 | a45d2/16.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L36 | 257 | a45d2/145.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L37 | 0 | a45d2/1458.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L38 | 300 | a45d2/148.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L39 | 237 | a45d2/146.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L40 | 330 | a45d2/2478.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L41 | 4295 | a45d2/001.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L42 | 476 | a45d2001/045.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L43 | 906 | a45d1/00.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |

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|---|---|---|---|---|---|---|---|
| L44 | 7635 | a45d1/04.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L45 | 593 | a45d2/362.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L46 | 998 | a45d2/367.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L47 | 297 | a45d2/2407.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L48 | 253 | a45d2002/025.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L49 | 795 | a45d2/02.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L50 | 93 | ("10094392"\|"20100226797"\|"20130008043"\|"20130104415"\|"20130133682"\|"20130269205"\|"20160356287"\|"20170273425"\|"2476002"\|"3837581"\|"3939850"\|"3990460"\|"5660191"\|"5765575"\|"5894849"\|"5966833"\|"6662811"\|"6668840"\|"6739071"\|"7631646"\|"8092166"\|"9752789"\|"9982677").PN. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/03/16 10:03 AM |
| L51 | 4 | "5626156".pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/03/16 12:03 PM |

## PE2E SEARCH - Search History (Interference)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | British Equivalents | Time Stamp |
|---|---|---|---|---|---|---|---|
| N1 | 14 | (curl$3 AND (roller curler cylinder tub$4 cylindric$4 rod mandrel) AND hair AND (sleeve sheet wrap foil paper) AND (hook)).clm. | (US-PGPUB ; USPAT) | OR | ON | ON | 2020/12/07 02:12 PM |
| N2 | 4 | (6092534 6161553 5662128 6012466).pn. | (US-PGPUB ; USPAT) | OR | ON | ON | 2020/12/07 03:12 PM |

## Bibliographic Data

Application No: 14/656,357

Foreign Priority claimed: (•) Yes ( ) No

35 USC 119 (a-d) conditions met: [✓] Yes [ ] No [ ] Met After Allowance

Verified and Acknowledged: /JENNIFER GILL/ Examiner's Signature [ ] Initials

Title: ATTACHMENT FOR A HAND HELD APPLIANCE

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| FILING or 371(c) DATE | CLASS | GROUP ART UNIT | ATTORNEY DOCKET NO. |
|---|---|---|---|
| 03/12/2015 | 132 | 3772 | 42466-20933.00 |
| RULE | | | |

**APPLICANTS**

DYSON TECHNOLOGY LIMITED, Wiltshire, UNITED KINGDOM

**INVENTORS**

Alasdair Michael MACLAINE, London, UNITED KINGDOM

**CONTINUING DATA**

**FOREIGN APPLICATIONS**

UNITED KINGDOM GB1404982.9 03/20/2014

UNITED KINGDOM GB1404985.2 03/20/2014

**IF REQUIRED, FOREIGN LICENSE GRANTED****

03/23/2015

**STATE OR COUNTRY**

UNITED KINGDOM

**ADDRESS**

MORRISON & FOERSTER LLP
2100 L STREET, NW
SUITE 900
WASHINGTON, DC 20037
UNITED STATES

**FILING FEE RECEIVED**

$2,940

## PE2E SEARCH - Search History (Prior Art)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | British Equivalents | Time Stamp |
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| L1 | 7621 | a45d1/04.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/29 12:09 PM |
| L2 | 0 | ("2020/0146414").urpn. AND (PGPB \| USPT \| USOC).dbnm. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/29 12:09 PM |
| L3 | 414 | a45d20/10.cpc. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/29 02:09 PM |
| L4 | 187 | a45d20/122.cpc. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/29 03:09 PM |
| L5 | 0 | ("2019/0357654").urpn. AND (PGPB \| USPT \| USOC).dbnm. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/29 03:09 PM |
| L6 | 187 | a45d2001/008.cpc. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/29 03:09 PM |
| L7 | 1523 | a45d2001/008.cpc. | (US-PGPUB ; USPAT ; USOCR ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/29 03:09 PM |
| L8 | 1523 | a45d2001/008.cpc. | (US-PGPUB ; USPAT ; USOCR ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/29 03:09 PM |
| L9 | 2903 | a45d20/10.cpc. | (US-PGPUB ; USPAT ; USOCR ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/29 03:09 PM |
| L10 | 1399 | a45d20/122.cpc. | (US-PGPUB ; USPAT ; USOCR ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/29 03:09 PM |
| L11 | 2 | "20100226797".pn. | (US-PGPUB ; USPAT ; USOCR ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/29 03:09 PM |

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| L12 | 264 | ("20080041406"\|"3981313"\|"20150265022"\|"20130111777"\|"20140366910"\|"20070119069"\|"4422464"\|"4250902"\|"20100226797"\|"6668840"\|"5868148"\|"4295283"\|"20030177657"\|"20130269205"\|"5966833"\|"6662811"\|"3857016"\|"20150265024"\|"20090293901"\|"20140366910"\|"20170273423"\|"8353303"\|"20160000201"\|"5740820"\|"5660191"\|"20040129289"\|"6377749"\|"1504988"\|"4602146"\|"5157757"\|"20170273425"\|"5894849"\|"7631646"\|"20170273422"\|"3107675"\|"3224454"\|"20130111777"\|"3939850"\|"9752789"\|"9982677"\|"3814898"\|"5626156"\|"2476002"\|"3990460"\|"6739071"\|"4214597"\|"0000000"\|"5661910"\|"20110198421"\|"4456020"\|"20170273421"\|"4197448"\|"6038782"\|"3837581"\|"10094392"\|"20130133682"\|"20140007448"\|"8092166"\|"4471791"\|"20070137060"\|"4856542"\|"5212366"\|"5740820"\|"4250902"\|"20030079366"\|"20130008043"\|"20130104415"\|"5515874"\|"5765575"\|"20160356287").PN. | (US-PGPUB ; USPAT ; USOCR ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/29 03:09 PM |

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| L13 | 69 | ("20080041406"\|"3981313"\|"20150265022"\|"20130111777"\|"20140366910"\|"20070119069"\|"4422464"\|"4250902"\|"20100226797"\|"6668840"\|"5868148"\|"4295283"\|"20030177657"\|"20130269205"\|"5966833"\|"6662811"\|"3857016"\|"20150265024"\|"20090293901"\|"20140366910"\|"20170273423"\|"8353303"\|"20160000201"\|"5740820"\|"5660191"\|"20040129289"\|"6377749"\|"1504988"\|"4602146"\|"5157757"\|"20170273425"\|"5894849"\|"7631646"\|"20170273422"\|"3107675"\|"3224454"\|"20130111777"\|"3939850"\|"9752789"\|"9982677"\|"3814898"\|"5626156"\|"2476002"\|"3990460"\|"6739071"\|"4214597"\|"0000000"\|"5661910"\|"20110198421"\|"4456020"\|"20170273421"\|"4197448"\|"6038782"\|"3837581"\|"10094392"\|"20130133682"\|"20140007448"\|"8092166"\|"4471791"\|"20070137060"\|"4856542"\|"5212366"\|"5740820"\|"4250902"\|"20030079366"\|"20130008043"\|"20130104415"\|"5515874"\|"5765575"\|"20160356287").PN. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/29 03:09 PM |
| L14 | 1 | "20140060569".pn. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/29 03:09 PM |

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| L15 | 292 | ("284962" \| "1357261" \| "1767060" \| "1896869" \| "2014185" \| "2035733" \| "2071266" \| "D103476" \| "2115883" \| "D115344" \| "2210458" \| "2258961" \| "2295502" \| "2336295" \| "2363839" \| "2433795" \| "2473325" \| "2476002" \| "2488467" \| "2510132" \| "2544379" \| "2547448" \| "2583374" \| "2620127" \| "2692800" \| "2711682" \| "2765977" \| "2808198" \| "2813673" \| "2830779" \| "2838229" \| "2922277" \| "2922570" \| "3004403" \| "3047208" \| "3270655" \| "D206973" \| "3503138" \| "3518776" \| "3724092" \| "3729934" \| "3743186" \| "3795367" \| "3872916" \| "3875745" \| "3885891" \| "3943329" \| "4037991" \| "4046492" \| "4061188" \| "4073613" \| "4090814" \| "4113416" \| "4136735" \| "4173995" \| "4180130" \| "4184417" \| "4184541" \| "4192461" \| "4332529" \| "4336017" \| "4342204" \| "4448354" \| "4568243" \| "4630475" \| "4643351" \| "4703152" \| "4718870" \| "4732539" \| "4734017" \| "4790133" \| "4826084" \| "4850804" \| "4878620" \| "4893990" \| "4978281" \| "5061405" \| "D325435" \| "5110266" \| "5168722" \| "5176856" \| "5188508" \| "5296769" \| "5310313" \| "5317815" \| "5402938" \| "5407324" \| "5425902" \| "5435489" \| "5518370" \| "5609473" \| "5645769" \| "5649370" \| "5671321" \| "5735683" \| "5762034" \| "5762661" \| "5783117" \| "5794306" \| "D398983" \| "5841080" \| "5843344" \| "5862037" \| "5868197" \| "5881685" \| "D415271" \| "6015274" \| "6073881" \| "D429808" \| "6123618" \| "6155782" \| "D435899" \| "6254337" \| "6269549" \| "6278248" \| "6282746" \| "6293121" \| "6321034" \| "6386845" \| "6480672" \| "6599088" \| "6604694" \| "D485895" \| "6789787" \| "6791056" \| "6830433" \| "7059826" \| "7088913" \| "7147336" \| "D539414" \| "7192258" \| "7198473" \| "7412781" \| "7478993" \| "7540474" \| "D598532" \| "D602143" \| "D602144" \| "D605748" \| "7660110" | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/29 04:09 PM |



SharkNinja Ex. 1002
Page 1979 of 1998

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|---|---|---|---|---|---|---|---|
| | | \| "7664377" \| "D614280"<br>\| "7731050" \| "7775848"<br>\| "7806388" \| "7841045"<br>\| "8002520" \| "8092166"<br>\| "8113490" \| "8152495"<br>\| "8246317" \| "8308445"<br>\| "8348629" \| "8356804"<br>\| "8454322" \| "8529226"<br>\| "8544826" \| "8721307"<br>\| "20020106547" \|<br>"20030059307" \|<br>"20030164367" \|<br>"20030171093" \|<br>"20030190183" \|<br>"20040022631" \|<br>"20040049842" \|<br>"20040106370" \|<br>"20040149881" \|<br>"20050031448" \|<br>"20050053465" \|<br>"20050069407" \|<br>"20050128698" \|<br>"20050163670" \|<br>"20050173997" \|<br>"20050281672" \|<br>"20060172682" \|<br>"20060199515" \|<br>"20060263073" \|<br>"20060279927" \|<br>"20070035189" \|<br>"20070041857" \|<br>"20070065280" \|<br>"20070166160" \|<br>"20070176502" \|<br>"20070210186" \|<br>"20070224044" \|<br>"20070269323" \|<br>"20080020698" \|<br>"20080124060" \|<br>"20080152482" \|<br>"20080166224" \|<br>"20080286130" \|<br>"20080314250" \|<br>"20090026850" \|<br>"20090032130" \|<br>"20090039805" \|<br>"20090060710" \|<br>"20090060711" \|<br>"20090078120" \|<br>"20090120925" \|<br>"20090191054" \|<br>"20090214341" \|<br>"20100133707" \|<br>"20100150699" \|<br>"20100162011" \|<br>"20100171465" \|<br>"20100225012" \|<br>"20100226749" \|<br>"20100226750" \|<br>"20100226751" \|<br>"20100226752" \|<br>"20100226753" \|<br>"20100226754" \|<br>"20100226758" \|<br>"20100226763" \|<br>"20100226764" \|<br>"20100226769" \|<br>"20100226771" \|<br>"20100226787" \|<br>"20100226797" \| | | | | | |

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| | | "20100226801" \| "20100254800" \| "20110058935" \| "20110110805" \| "20110127701" \| "20110164959" \| "20110223014" \| "20110223015" \| "20120031509" \| "20120033952" \| "20120034108" \| "20120039705" \| "20120045315" \| "20120045316" \| "20120057959" \| "20120082561" \| "20120093629" \| "20120093630" \| "20120114513" \| "20120230658" \| "20120308375" \| "20130026664" \| "20130028763" \| "20130028766" \| "20130129490" \| "20130161842" \| "20130199372" \| "20130272858" \| "20130280051" \| "20130280061" \| "20130280096" \| "20140079566" \| "20140084492" \| "20140210114" \| "20140255173" \| "20140255217").pn. OR ("10094392").urpn. AND (PGPB \| USPT \| USOC).dbnm. | | | | | |
| L16 | 66 | ("2013/0028763").urpn. AND (PGPB \| USPT \| USOC).dbnm. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/29 05:09 PM |

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| L17 | 288 | ("284962" \| "1357261" \| "1767060" \| "1896869" \| "2014185" \| "2035733" \| "2071266" \| "D103476" \| "2115883" \| "D115344" \| "2210458" \| "2258961" \| "2295502" \| "2336295" \| "2363839" \| "2433795" \| "2473325" \| "2476002" \| "2488467" \| "2510132" \| "2544379" \| "2547448" \| "2583374" \| "2620127" \| "2711682" \| "2765977" \| "2808198" \| "2813673" \| "2830779" \| "2838229" \| "2922277" \| "2922570" \| "3004403" \| "3047208" \| "3270655" \| "D206973" \| "3503138" \| "3518776" \| "3724092" \| "3729934" \| "3743186" \| "3795367" \| "3872916" \| "3875745" \| "3885891" \| "3943329" \| "4037991" \| "4046492" \| "4061188" \| "4073613" \| "4090814" \| "4113416" \| "4136735" \| "4173995" \| "4180130" \| "4184417" \| "4184541" \| "4192461" \| "4332529" \| "4336017" \| "4342204" \| "4448354" \| "4568243" \| "4630475" \| "4643351" \| "4703152" \| "4718870" \| "4732539" \| "4734017" \| "4790133" \| "4850804" \| "4878620" \| "4893990" \| "4978281" \| "5061405" \| "D325435" \| "5110266" \| "5168722" \| "5176856" \| "5188508" \| "5296769" \| "5310313" \| "5317815" \| "5402938" \| "5407324" \| "5425902" \| "5435489" \| "5518370" \| "5609473" \| "5645769" \| "5649370" \| "5671321" \| "5735683" \| "5762034" \| "5762661" \| "5783117" \| "5794306" \| "D398983" \| "5841080" \| "5843344" \| "5862037" \| "5868197" \| "5881685" \| "D415271" \| "6015274" \| "6073881" \| "D429808" \| "6123618" \| "6155782" \| "D435899" \| "6254337" \| "6269549" \| "6278248" \| "6282746" \| "6293121" \| "6321034" \| "6386845" \| "6480672" \| "6599088" \| "6604694" \| "D485895" \| "6789787" \| "6791056" \| "6830433" \| "7059826" \| "7088913" \| "7147336" \| "D539414" \| "7192258" \| "7198473" \| "7412781" \| "7478993" \| "7540474" \| "D598532" \| "D602143" \| "D602144" \| "D605748" \| "7660110" \| "7664377" \| "D614280" | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/29 05:09 PM |

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|---|---|---|---|---|---|---|---|
| | | \| "7731050" \| "7775848" \| "7806388" \| "7841045" \| "8002520" \| "8092166" \| "8113490" \| "8152495" \| "8246317" \| "8308445" \| "8348629" \| "8356804" \| "8454322" \| "8529226" \| "8544826" \| "8721307" \| "20020106547" \| "20030059307" \| "20030164367" \| "20030171093" \| "20030190183" \| "20040022631" \| "20040049842" \| "20040106370" \| "20040149881" \| "20050031448" \| "20050053465" \| "20050069407" \| "20050128698" \| "20050163670" \| "20050173997" \| "20050281672" \| "20060172682" \| "20060199515" \| "20060263073" \| "20060279927" \| "20070035189" \| "20070041857" \| "20070065280" \| "20070166160" \| "20070176502" \| "20070224044" \| "20070269323" \| "20080020698" \| "20080124060" \| "20080152482" \| "20080166224" \| "20080286130" \| "20080314250" \| "20090026850" \| "20090032130" \| "20090039805" \| "20090060710" \| "20090060711" \| "20090078120" \| "20090120925" \| "20090191054" \| "20090214341" \| "20100133707" \| "20100150699" \| "20100162011" \| "20100171465" \| "20100225012" \| "20100226749" \| "20100226750" \| "20100226751" \| "20100226752" \| "20100226753" \| "20100226754" \| "20100226758" \| "20100226763" \| "20100226764" \| "20100226769" \| "20100226771" \| "20100226787" \| "20100226797" \| "20100226801" \| "20100254800" \| | | | | | |

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|---|---|---|---|---|---|---|---|
| | | "20110058935" \| "20110110805" \| "20110164959" \| "20110223014" \| "20110223015" \| "20120031509" \| "20120033952" \| "20120034108" \| "20120039705" \| "20120045315" \| "20120045316" \| "20120057959" \| "20120082561" \| "20120093629" \| "20120114513" \| "20120230658" \| "20120308375" \| "20130026664" \| "20130028763" \| "20130028766" \| "20130129490" \| "20130161842" \| "20130199372" \| "20130272858" \| "20130280051" \| "20130280061" \| "20130280096" \| "20130323100" \| "20140079566" \| "20140084492" \| "20140210114" \| "20140255173" \| "20140255217").pn. OR ("8967980").urpn. AND (PGPB \| USPT \| USOC).dbnm. | | | | | |
| L18 | 6 | "6047710".pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/30 09:09 AM |
| L19 | 72 | ("1612409" \| "1642780" \| "1959629" \| "2083016" \| "2424817" \| "2465491" \| "4454889" \| "4586519" \| "4681127" \| "4781288" \| "5107871" \| "5431177" \| "5542561" \| "5875795" \| "5896866" \| "5908037").pn. OR ("6047710").urpn. AND (PGPB \| USPT \| USOC).dbnm. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/30 09:09 AM |
| L20 | 9 | ("2424817").urpn. AND (PGPB \| USPT \| USOC).dbnm. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/30 10:09 AM |
| L21 | 1 | "7461992".pn. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/30 10:09 AM |
| L22 | 13 | ("4378653" \| "4430013" \| "4726700" \| "4917134" \| "5019033" \| "20030123919").pn. OR ("7461992").urpn. AND (PGPB \| USPT \| USOC).dbnm. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/30 10:09 AM |

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| L23 | 317052 | (fan WITH (screen mesh)) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/30 01:09 PM |
| L24 | 30385 | (fan WITH (screen mesh) WITH (guard$3 protect$3)) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/30 01:09 PM |
| L25 | 12169 | (fan WITH (screen mesh) WITH (direct$3 SAME flow)) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/30 01:09 PM |
| L26 | 9718 | (fan WITH (screen mesh) WITH (direct$3 WITH flow)) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/30 01:09 PM |
| L27 | 365 | (fan WITH (screen mesh) WITH (direct$3 WITH flow)) | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/30 01:09 PM |
| L28 | 1 | "20100226797".pn. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/09/30 01:09 PM |
| L29 | 3 | "20130051894".pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/09/30 02:09 PM |
| L30 | 1401 | a45d20/122.cpc. | (US-PGPUB ; USPAT ; USOCR ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/10/07 10:10 AM |
| L31 | 251 | d28/10.ccls. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 02:04 PM |
| L32 | 182 | d28/12.ccls. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 02:04 PM |
| L33 | 79 | d28/15.ccls. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 02:04 PM |
| L34 | 302 | d28/18.ccls. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 02:04 PM |
| L35 | 1034 | d32/31.ccls. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 02:04 PM |
| L36 | 766 | 34/96.ccls. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 02:04 PM |
| L37 | 1150 | 34/97.ccls. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 02:04 PM |
| L38 | 239 | 34/98.ccls. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 02:04 PM |

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| L39 | 766 | 34/99.ccls. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 02:04 PM |
| L40 | 1048 | a45d1/02.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 02:04 PM |
| L41 | 2106 | a45d20/50.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 02:04 PM |
| L42 | 231 | a45d2/06.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 02:04 PM |
| L43 | 1017 | a45d2/10.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L44 | 347 | a45d2/125.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L45 | 222 | a45d2/127.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L46 | 729 | a45d2/14.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L47 | 902 | a45d2/24.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L48 | 294 | a45d2/2407.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L49 | 60 | a45d2/2414.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L50 | 203 | a45d2/2421.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L51 | 93 | a45d2/245.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L52 | 221 | a45d2/2457.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L53 | 65 | a45d2/2492.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L54 | 137 | a45d2/2485.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |

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| L55 | 591 | a45d2/12.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L56 | 261 | a45d2/22.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L57 | 190 | a45d2/2464.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L58 | 9049 | a45d20/12.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L59 | 177 | a45d4/04.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L60 | 221 | a45d4/08.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L61 | 738 | a45d4/12.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L62 | 649 | a45D6/02.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |
| L63 | 1366 | a45D7/02.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/04/12 03:04 PM |

## PE2E SEARCH - Search History (Interference)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | British Equivalents | Time Stamp |
|---|---|---|---|---|---|---|---|
| N1 | 1142 | (hair AND (slot plate) AND (air heat fluid)).clm. | (US-PGPUB ; USPAT) | OR | ON | ON | 2021/04/12 03:04 PM |

## PE2E SEARCH - Search History (Prior Art)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | British Equivalents | Time Stamp |
|---|---|---|---|---|---|---|---|
| L1 | 78 | ("20030079366"\|"20030177657"\|"20130008043"\|"20130104415"\|"20130269205"\|"20140007448"\|"20170273425"\|"3224454"\|"3837581"\|"3939850"\|"4422464"\|"4602146"\|"5157757"\|"5515874"\|"5626156"\|"5765575"\|"5894849").PN. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/10/20 11:10 AM |
| L2 | 18 | ("20030079366"\|"20030177657"\|"20130008043"\|"20130104415"\|"20130269205"\|"20140007448"\|"20170273425"\|"3224454"\|"3837581"\|"3939850"\|"4422464"\|"4602146"\|"5157757"\|"5515874"\|"5626156"\|"5765575"\|"5894849").PN. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/10/20 11:10 AM |
| L3 | 3 | ("2013/0008043").urpn. AND (PGPB \| USPT \| USOC).dbnm. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/10/20 11:10 AM |
| L4 | 2 | 20150265024.pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 10:12 AM |
| L5 | 2 | 20100226797.pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 10:12 AM |
| L6 | 7631 | a45d1/04.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 10:12 AM |
| L7 | 10 | (20110204606 4456020 4260871).pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 10:12 AM |
| L8 | 10 | (20110203606 4456020 4260871).pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 10:12 AM |
| L9 | 3247 | a45d20/10.cpc. NOT (L6) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 10:12 AM |
| L10 | 6078 | a45d20/12.cpc. NOT (L6 L9 L8 ) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 11:12 AM |
| L11 | 6078 | a45d20/12.cpc. NOT (L6 L9 L8) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 11:12 AM |
| L12 | 879 | a45d20/122.cpc. NOT (L6 L9 L8 L11) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 11:12 AM |

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| L13 | 397 | a45d2001/008.cpc. NOT (L6 L9 L8 L11) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 11:12 AM |
| L14 | 397 | a45d2001/008.cpc. NOT (L6 L9 L8 L11 L12) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 11:12 AM |
| L15 | 475 | a45d2/362.cpc. NOT (L6 L9 L8 L11 L12) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 11:12 AM |
| L16 | 551 | a45d2/367.cpc. NOT (L6 L9 L8 L11 L12 L14 L15) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 12:12 PM |
| L17 | 275 | a45d2/2407.cpc. NOT (L6 L9 L8 L11 L12 L14 L15 L16) | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/04 12:12 PM |
| L18 | 4 | 6161553.pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 01:12 PM |
| L19 | 5 | 6092534.pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 01:12 PM |
| L20 | 13 | ("3675663" \| "4569360" \| "4576188" \| "4598722" \| "4699159" \| "5286949" \| "5482060" \| "5522408" \| "5901711").pn. OR ("6092534").urpn. AND (PGPB \| USPT \| USOC).dbnm. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/12/07 01:12 PM |
| L21 | 164 | a45d2/02.cpc. | (US-PGPUB ; USPAT ; USOCR) | OR | ON | ON | 2020/12/07 01:12 PM |
| L22 | 795 | a45d2/02.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 01:12 PM |
| L23 | 538 | a45d2/122.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 01:12 PM |
| L24 | 338 | a45d2/125.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 01:12 PM |
| L25 | 223 | a45d2/127.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 01:12 PM |
| L26 | 1086 | a45d7/00.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L27 | 284 | a45d2006/005.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |

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|---|---|---|---|---|---|---|---|
| L28 | 854 | a45d6/00.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L29 | 622 | a45d6/02.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L30 | 389 | a45d2/08.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L31 | 231 | a45d2/06.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L32 | 128 | a45d2/04.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L33 | 254 | a45d2/22.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L34 | 845 | a45d2/18.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L35 | 142 | a45d2/16.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L36 | 257 | a45d2/145.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L37 | 0 | a45d2/1458.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L38 | 300 | a45d2/148.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L39 | 237 | a45d2/146.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L40 | 330 | a45d2/2478.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/07 02:12 PM |
| L41 | 4295 | a45d2/001.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L42 | 476 | a45d2001/045.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L43 | 906 | a45d1/00.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| L44 | 7635 | a45d1/04.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L45 | 593 | a45d2/362.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L46 | 998 | a45d2/367.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L47 | 297 | a45d2/2407.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L48 | 253 | a45d2002/025.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L49 | 795 | a45d2/02.cpc. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2020/12/08 11:12 AM |
| L50 | 93 | ("10094392"\|"20100226797"\|"20130008043"\|"20130104415"\|"20130133682"\|"20130269205"\|"20160356287"\|"20170273425"\|"2476002"\|"3837581"\|"3939850"\|"3990460"\|"5660191"\|"5765575"\|"5894849"\|"5966833"\|"6662811"\|"6668840"\|"6739071"\|"7631646"\|"8092166"\|"9752789"\|"9982677").PN. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/03/16 10:03 AM |
| L51 | 4 | "5626156".pn. | (US-PGPUB ; USPAT ; USOCR ; FIT (CN , FR , WO) ; FPRS ; EPO ; JPO ; DERWENT) | OR | ON | ON | 2021/03/16 12:03 PM |

## PE2E SEARCH - Search History (Interference)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | British Equivalents | Time Stamp |
|---|---|---|---|---|---|---|---|
| N1 | 14 | (curl$3 AND (roller curler cylinder tub$4 cylindric$4 rod mandrel) AND hair AND (sleeve sheet wrap foil paper) AND (hook)).clm. | (US-PGPUB ; USPAT) | OR | ON | ON | 2020/12/07 02:12 PM |
| N2 | 4 | (6092534 6161553 5662128 6012466).pn. | (US-PGPUB ; USPAT) | OR | ON | ON | 2020/12/07 03:12 PM |

Doc Code: IFEE PTOL/85B-EFS

Document Description: Issue Fee Payment (PTO-85B)

# Issue Fee Transmittal Form

| Application Number | Filing Date | First Named Inventor | Atty. Docket No. | Confirmation No. |
|---|---|---|---|---|
| 14656357 | 12-Mar-2015 | Alasdair MACLAINE | 42466-20933.00 | 9085 |

**TITLE OF INVENTION :**

ATTACHMENT FOR A HAND HELD APPLIANCE

| Entity Status | Application Type | Art Unit | Class - Subclass | EXAMINER |
|---|---|---|---|---|
| Regular Undiscounted | Utility under 35 USC 111(a) | 3772 | 271000 | JENNIFER GILL |

| Issue Fee Due | Publication Due | Total Fee(s) Due | Date Due | Prev. Paid Fee |
|---|---|---|---|---|
| $1200 | $0 | $1200 | 10-Aug-2021 | $0 |

## 1.Change of Correspondence Address and/or Indication Of Fee Address (37 CFR 1.33 & 1.363)

| Current Correspondence Address: | Current Indicated Fee Address : |
|---|---|
| 25227<br>MORRISON & FOERSTER LLP<br><br>2100 L STREET, NW<br>SUITE 900<br>WASHINGTON DC 20037<br>UNITED STATES<br>202-887-1500<br>EOfficeVA@mofo.com | |
| ☐ Change of correspondence address requested, system generated AIA/122-EFS form attached | ☐ Fee Address indication requested, system generated SB/47-EFS form attached |

## 2.Entity Status

**Change in Entity Status**

○ Applicant certifying micro entity status; system generated Micro Entity certification form attached. See 37 CFR 1.29.
Note: Absent a valid certification of micro entity status, issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment. If this box is checked, you will be prompted to choose a micro entity status on the gross income basis (37 CFR 1.29(a)) or the institution of higher education basis (37 CFR 1.29(d)), and make the applicable certification online.

○ Applicant asserting small entity status. See 37 CFR 1.27.
Note: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

◉ Applicant changing to regular undiscounted fee status.
Note: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

Doc Code: IFEE PTOL/85B-EFS

Document Description: Issue Fee Payment (PTO-85B)

**3.The Following Fee(s) Are Submitted:**

☒ Issue Fee

☐ I authorize USPTO to apply my previously paid issue fee to the current fees due

☐ Publication Fee

☐ The Director is hereby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number _____

☐ Advance Order - # of copies _____

☒ If i**n addition to** the payment of the issue fee amount submitted with this form, there are any discrepancies in any amount(s) due, the Director is authorized to charge any deficiency, or credit any overpayment, to Deposit Account Number 03-1952 . The **issue fee must be submitted** with this form. **If payment of the issue fee does not accompany this form, checking this box and providing a deposit account number will NOT be effective to satisfy full payment of the fee(s) due.**

**4.Firm and/or Attorney Names To Be Printed**

**NOTE: If no name is listed, no name will be printed**
For printing on the patent front page, list to be displayed as entered

1. Morrison & Foerster LLP
2.
3.

**5.Assignee Name(s) and Residence Data To Be Printed**

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

| Name | City | State | Country | Category |
|---|---|---|---|---|
| DYSON TECHNOLOGY LIMITED | Malmesbury, Wiltshire | | united kingdom | corporation |

**6.Signature**

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via EFS-WEB on the date indicated below.

| | | | |
|---|---|---|---|
| **Signature** | /christopher gloria/ | **Date** | 05-27-2021 |
| **Name** | Christopher Elmose Gloria | **Registration Number** | 71907 |



SharkNinja Ex. 1002
Page 1993 of 1998

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 14656357 |
| **Filing Date:** | 12-Mar-2015 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Filer:** | Christopher Elmose Gloria/Nicole Jones |
| **Attorney Docket Number:** | 42466-20933.00 |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| UTILITY APPL ISSUE FEE | 1501 | 1 | 1200 | 1200 |
| PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL | 1504 | 1 | 0 | 0 |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |
| **Miscellaneous:** | | | | |
| | | **Total in USD ($)** | | **1200** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 42833924 |
| **Application Number:** | 14656357 |
| **International Application Number:** | |
| **Confirmation Number:** | 9085 |
| **Title of Invention:** | ATTACHMENT FOR A HAND HELD APPLIANCE |
| **First Named Inventor/Applicant Name:** | Alasdair Michael MACLAINE |
| **Customer Number:** | 25227 |
| **Filer:** | Christopher Elmose Gloria/Nicole Jones |
| **Filer Authorized By:** | Christopher Elmose Gloria |
| **Attorney Docket Number:** | 42466-20933.00 |
| **Receipt Date:** | 27-MAY-2021 |
| **Filing Date:** | 12-MAR-2015 |
| **Time Stamp:** | 15:33:19 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $1200 |
| RAM confirmation Number | E20215QF33170554 |
| Deposit Account | |
| Authorized User | |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Issue Fee Payment (PTO-85B) | Web85b.pdf | 46150<br>4e7c0a3a3cf952ca03f08f770434edcd5d76df91 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Fee Worksheet (SB06) | fee-info.pdf | 31989<br>1108032563eb0e0874a2716048282ba62d6c3c92 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 78139 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**
**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**
**New International Application Filed with the USPTO as a Receiving Office**
**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

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| APPLICATION NO. | ISSUE DATE | PATENT NO. | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 14/656,357 | 06/29/2021 | 11044979 | 42466-20933.00 | 9085 |

25227 7590 06/09/2021

MORRISON & FOERSTER LLP
2100 L STREET, NW
SUITE 900
WASHINGTON, DC 20037

# ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Alasdair Michael MACLAINE, London, UNITED KINGDOM;
DYSON TECHNOLOGY LIMITED, Wiltshire, UNITED KINGDOM;

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