



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
17.04.2013 Bulletin 2013/16

(51) Int Cl.:
B26B 21/44 (2006.01)

(21) Application number: **12169917.7**

(22) Date of filing: **30.05.2012**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

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(30) Priority: **03.06.2011 GB 201109338**

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Remarks:

Claims 16-21 are deemed to be abandoned due to non-payment of the claims fees (Rule 45(3) EPC).

(54) **Shaving aid and method of replenishment thereof**

(57) Aspects of the present invention relate to the field of razors and in particular those razors or razor heads (2) comprising a shaving aid secured to the head of the razor. Such aids increase shaving comfortableness by providing one or more of a lubricant, whisker softener,

razor cleaner, medicinal agent, cosmetic agent or a combination thereof. According to an aspect of the present invention there is a method of replenishing the lubricating portion (6) on a razor with a lubricant (12), the method comprising the steps of applying a lubricating fluid to the lubricating portion.

FIGURE 1

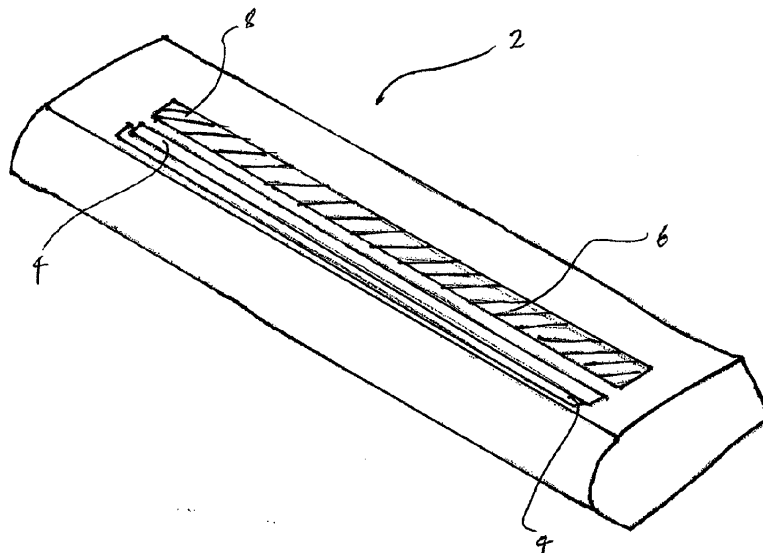
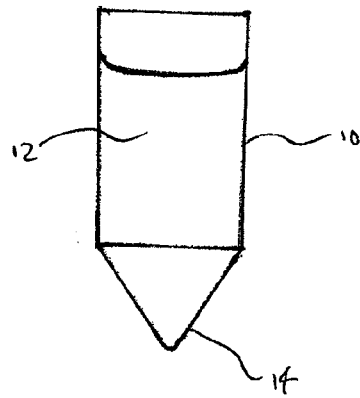


FIGURE 2



Description

[0001] The present invention relates to the field of razors, and in particular those razors or razor heads comprising a shaving aid secured to the head of the razor. Such aids increase shaving comfortableness by providing one or more of

[0002] Shaving aids are commonly provided fixedly secured to the head of the razor generally parallel to the longitudinal length of the blade. The act of shaving is improved as with each stroke of the razor during shaving the shaving aid contacts the skin usually following the blade and provides increased comfort to the user. It is common, however, that the shaving aid is quickly used up, especially when the razor is, for example, left in a damp environment such as in a shower. As such, one or more blades may have significant remaining life whereas the shaving aid, which may be termed a lubricating portion and typically is in the form of a strip, has been significantly reduced in effectiveness or may have completely lost its lubricating capability.

[0003] The present invention provides methods of replenishing the shaving aid of a razor. Aspects of the present invention also provide a dispensing receptacle and a razor head.

[0004] According to a first aspect of the present invention there is a method of replenishing the lubricating portion on a razor with a lubricant, the method comprising the steps of providing a dispensing receptacle physically separated from the lubricating portion, the dispensing receptacle having lubricating fluid therein, and applying the lubricating fluid from the dispensing receptacle to the lubricating portion.

[0005] Accordingly, the life of a razor head or a razor as a whole is increased by replenishing the lubricating portion. The lubricating portion is preferably a lubricating strip.

[0006] The razor head and thus lubricating strip are physically separated (i.e. not co-joined) meaning that a user can apply lubricant (and preferably lubricating fluid) to the lubricating portion/strip as required to replenish lubricating capability. The dispensing receptacle can therefore be stored separately until required for use.

[0007] The method may further comprise including the application of a lubricant from a dispensing receptacle onto the lubricating portion via an applicator. The applicator is beneficially in communication with the dispensing receptacle, and preferably provides a fluid flow path between the dispensing receptacle and the applicator. The applicator is beneficially drawn across the lubricating portion.

[0008] The lubricating portion preferably includes a porous substrate arranged to absorb the lubricant on application thereto. The porous substrate may comprise a thermoplastic. The applicator preferably includes a sponge or a brush. The applicator may include a nozzle.

[0009] The lubricant fluid preferably includes an acrylic polymer. The lubricating fluid may also comprise polyethylene oxide.

[0010] One particularly beneficial lubricating fluid may include polyacrylate. It is further beneficial that the polyacrylate is hydrophobically modified, and is preferably 3% hydrophobically modified. It will be appreciated that the percentage of hydrophobic modification may be changed or pre-selected dependent on specific requirements.

[0011] The lubricant may include and preferably comprise a solution of hypromellose (hydroxypropyl methylcellulose), and even more preferably a 5% solution of hypromellose. Again, it will be appreciated that the percentage solution may be varied according to specific requirements. Test results are presented in the specific description and these lubricants are particularly beneficial for their properties including retention on the lubricating strip.

[0012] The lubricant may include one or more additives such as alcohols and/or sodium stearate. It is further beneficial that the lubricant incorporates a bactericide, such as acticide.

[0013] The present invention also extends to a razor lubricating portion replenishing kit, the kit comprising a dispensing receptacle having lubricant therein and a razor head physically separate from the dispensing receptacle, the razor head having a lubricating portion.

[0014] Also according to the present invention there is a dispensing receptacle for dispensing lubricant to a lubricating portion of a razor wherein the dispensing receptacle includes a lubricant therein.

[0015] The lubricant is beneficially a fluid at room temperature and pressure.

[0016] The dispensing receptacle preferably further comprises an applicator for applying lubricant to the lubricating strip of a razor.

[0017] The lubricant may include one or more of silicon oil, polyethylene oxide, polyacrylamide, natural polysaccharide, silicon polyethylene oxide, medicinal agent and/or a blood coagulant.

[0018] The applicator preferably cooperates with the dispensing receptacle. The applicator preferably includes an opening for controlling release of the lubricant from the dispensing receptacle.

[0019] The dispensing receptacle is beneficially physically separate from a razor. The lubricant preferably includes polyacrylate, and preferably the polyacrylate is hydrophobically modified, and preferably wherein the polyacrylate is 3% hydrophobically modified.

[0020] Alternatively, the lubricant is a solution of hypromellose (hydroxypropyl methylcellulose) and is preferably a 5% solution of hypromellose.

[0021] According to another aspect of the present invention there is a razor head including a razor blade secured to the head and a shaving aid arranged to be removably secured to the head. In this aspect of the present invention the shaving aid, beneficially comprising a lubricating strip, may be removed from the razor head and therefore replaced with a new razor shaving aid. As such, the life of the razor head including the blades may be extended through replenishment via replacement of the shaving aid.

[0022] The shaving aid preferably comprises of a porous substrate including a lubricating fluid therein. The porous substrate is beneficially received in a housing. The housing is preferably secured to the razor head. The head preferably comprises a shaving aid engagement portion movable between a closed configuration in which the shaving is secured to the razor head and a release configuration in which the shaving aid can be withdrawn from the razor head. The housing for receiving the porous substrate is therefore preferably relatively secured to the razor head.

[0023] In a further aspect of the present invention, the lubricant may be solid at room temperature and may be received in an opening provided in the head of a razor. Accordingly, there is provided in accordance with a third aspect a method of replenishing the lubricating strip of a razor, the method comprising the steps of inserting a solid lubricant material into an opening in a head of a razor. The lubricant is beneficially as elsewhere described in this application and is solid at room temperature and pressure.

[0024] According to another aspect of the present invention there is a razor head comprising a lubricating portion, wherein the lubricating portion includes a lubricating material.

[0025] The lubricating material preferably includes polyacrylate, and preferably wherein the polyacrylate is hydrophobically modified, and preferably wherein the polyacrylate is 3% hydrophobically modified.

[0026] The lubricating material may comprise hypromellose, (hydroxypropyl methylcellulose) and is preferably a 5% solution of hypromellose.

[0027] Exemplary embodiments of aspects of the present invention will now be described by way of example only with reference to the accompanying drawings in which:

Figure 1 is a schematic perspective view of a razor head according to an exemplary embodiment of the present invention.

Figure 2 is a schematic side view of a dispenser for dispensing lubricating fluid onto a razor, as shown for example, in Figure 1.

Figure 3 is a schematic perspective view of a razor head and a shaving aid incorporating a second aspect of the present invention.

[0028] Referring to Figure 1 there is a razor head 2 which is arranged to be secured to a razor handle by known means which has not been shown in the exemplary embodiments. It will, however, be appreciated that the razor head 2 may be permanently or integrally secured to a handle.

[0029] The razor head 2 includes one or more blades 4 and in the exemplary embodiments shown includes two blades extending upwardly from the razor head 2. It will be appreciated that any number of blades 4 may be provided as required.

[0030] The razor head 2 also includes a shaving aid which is beneficially a lubricating strip 6 shown in Figure 1 secured to the razor head 2. The lubricating strip 6 may be recessed into the razor head 2 or may be secured to the razor head 2 by an adhesive material. In any event, the adhesive strip contacts the skin following contact by the one or more blades and thus works to eliminate irritation to the user. If shaving is repeated over this same area then the lubricant left minimises any subsequent irritation that may occur due to more than one passing of the blades.

[0031] Referring to Figure 2, there is a schematic representation of a dispenser according to at least one aspect of the present invention. The dispenser 10 includes a lubricant 12 therein. The lubricant 12 is dispensed via a nozzle 14 and may be dispensed directly onto a worn or used lubricating strip 6. The dispenser 10 is preferably elastically deformable and may be a polymeric bottle. The nozzle and in particular the opening of the nozzle may be shaped as being elongate and may be substantially the same width as the lubricating strip. The lubricant 12 may be dispensed onto the strip and smoothed with a sponge or may be brushed. In one embodiment is envisaged that the lubricant may be sprayed onto the lubricant strip 6. In one embodiment a separate applicator may be provided in order to distribute the lubricant evenly and this may, for example, comprise a spreader arrangement which may come in on one embodiment, would be a suitably shaped polymer material.

[0032] The lubricant itself may comprise polyethylene oxide. Polyethylene oxide is water soluble. Alternatively, the lubricant may be a polyurethane impregnated with acrylic polymer. The lubricating strip 6 preferably includes a porous substrate such as foam 8 which absorbs the lubricant. On application of the lubricant to the porous substrate, the lubricant is in a liquid form and solidifies slowly in communication with the air thereby replenishing the lubricant strip.

[0033] Referring to Figure 3, the lubricant strip in one embodiment comprises a housing 7 for housing the porous substrate 8. The housing 7 is preferably received in a receiving opening 16 in the head in one embodiment of the present

invention. In this embodiment the lubricating strip 6 can simply be removed from the razor head 2 and a new lubricating strip can be provided. For example, a plurality of lubricating strips may be provided in a single packaging thereby storing replacements as necessary. The housing 7 is received by the razor head and one or more securing elements 18 are beneficially provided for securing the lubricating strip 6 in the opening 16 in the razor head 2. The lubricating strip 6 may be secured via a number of known suitable arrangements and one example is provided in Figure 3 with a securing element 18. The securing element 18 may deflect and be received in a corresponding opening in the edge of the lubricating strip 6. In order to release, a release button for example may be provided in the side of the razor head to retract the element 18. Alternatively, the lubricating strip 6 may be removed by hand through simply applying a force to the lubricating strip 6.

[0034] It will be appreciated that even if the lubricating strip 6 may be releasably secured to the razor head 2, replenishment of the lubricating strip may also be achieved through reapplying a lubricant thereto via a dispenser 10.

[0035] In another embodiment, a lubricant strip may be provided as a solid material and is received in an opening directly provided in the head of the razor. In this case, the remnants of the previous strip may be removed or the new strip may simply be forced into the opening thus replenishing the lubricating strip.

[0036] Hypromellose (HPMC) is a highly beneficial lubricant as is it exhibits congealing properties at certain temperatures which is inversely related to the solution concentration of HPMC and the concentration of the methoxy group within the HPMC molecules. Accordingly, this congealing property can be manipulated to achieve beneficial results as a material for a lubricating strip on a razor head.

[0037] A number of formulations of lubricating fluid and material forming the lubricating portion or strip on the razor head have been tested. The optimal formulation is one that has flow properties so that it can be readily applied to the appropriate lubricating portion on a razor blade head. It beneficially dries quickly to form a thin coating and will subsequently rehydrate rapidly in contact with water. This creates a slippery film on hydration to provide lubrication and should retain on the razor head for an optimum period of time. The table presented below shows different formulations of lubricating fluid utilised and shows the results of testing including the percentage weight loss after two hours, rehydration capability, slipperiness and retention. The values provided are scores where 5 is excellent and 0 is poor. During testing, 1g of each formulation was transferred to a petri dish and allowed to dry overnight. The film was rehydrated by the addition of a drop of water and the rate of rehydration, the degree of slipperiness and the ability to be retained on the surface of the petri dish was assessed by hand.

Code	Formulation	%wt loss after 2h	Rehydration	Slipperiness	Retention
A	1% xanthan gum in water	14.5	5	4	2
B	1% xanthan gum in water plus 1% glycerol	22.5	5	4	2
C	1% xanthan gum solution in 40% aqueous methanol	37	5	4	2
D	3% Hydrophobically modified polyacrylate (Rheovis)	19	5	4	4.5
E	1% crosslinked carboxymethyl cellulose	18	5	4	1
F	1% xanthan gum containing 1% sodium stearate	24	5	4	4
G	1% xanthan gum solution plus 1% paraffin wax emulsion (made using 5% poloxamer)	14.9	5	3	1
H	5% solution of HPMC (hypromellose) in water	34.3	5	4	4.5
I	2% xanthan gum + 1% sodium stearate in 40% methanol		5	4	2.5
J	2% xanthan gum + 1% sodium stearate + 1 % glycerol in 40% methanol		5	4	3.5
I*	1.5% xanthan gum + 5% sodium stearate in 24% methanol		5	4	2.5

(continued)

Code	Formulation	%wt loss after 2h	Rehydration	Slipperiness	Retention
J*	1.5% xanthan gum + 5% sodium stearate + 1% glycerol in 24% methanol		5	4	3.5

[0038] It is apparent that the best performance was achieved by the compositions shown in D and H where the retention on the petri dish was extremely good. Furthermore, rehydration and slipperiness capability were also extremely good.

[0039] It will be appreciated that different concentrations may be utilised to further increase performance.

[0040] The present invention has been described by way of example only and it will be appreciated by the skilled addressee that one or more modifications and variations may be made without departing from the scope of protection afforded by the appended claims.

Claims

1. A method of replenishing the lubricating portion on a razor with a lubricant, the method comprising the steps of providing a dispensing receptacle physically separated from the lubricating portion, the dispensing receptacle having lubricating fluid therein, and applying the lubricating fluid from the dispensing receptacle to the lubricating portion.
2. A method according to claim 1 including applying the lubricating fluid from the dispensing receptacle onto the lubricating portion via an applicator in communication with the dispensing receptacle.
3. A method according to claim 2 comprising the step of drawing the applicator across the lubricating portion.
4. A method according to any preceding claim wherein the lubricating portion includes a porous substrate arranged to absorb the lubricating fluid on application thereto.
5. A method according to any preceding claim wherein the applicator includes a sponge or a brush or a nozzle.
6. A method according to any preceding claim wherein the lubricant includes an acrylic polymer.
7. A method according to any preceding claim wherein the lubricant includes polyacrylate.
8. A method according to claim 7 wherein the polyacrylate is hydrophobically modified, and is preferably 3% hydrophobically modified.
9. A method according to any of claims 1 to 7, wherein the lubricant includes a solution of hypromellose (hydroxypropyl methylcellulose), and is preferably a 5% solution of hypromellose in water.
10. A method according to any preceding claim wherein the lubricant includes one or more additives such as alcohol and/or sodium stearate.
11. A razor lubricating portion replenishing kit comprising a dispensing receptacle having a lubricant therein and a razor head physically separate from the dispensing receptacle, the razor head having a lubricating portion.
12. A dispensing receptacle for dispensing lubricant to a lubricating portion of a razor wherein the dispensing receptacle includes a lubricant therein.
13. A dispensing receptacle according to claim 12 physically separate from a razor.
14. A dispensing receptacle according to any of claims 12 to 13 comprising an applicator for applying lubricant to the lubricating portion of a razor.
15. A dispensing receptacle according to any of claims 12 to 13, wherein the lubricant includes polyacrylate, and preferably wherein the polyacrylate is hydrophobically modified, and preferably wherein the polyacrylate is 3% hydrophobically modified.

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16. A dispensing receptacle according to any of claims 12 to 15, wherein the lubricant is a solution of hypromellose (hydroxypropyl methylcellulose) and is preferably a 5% solution of hypromellose.
- 5 17. A dispensing receptacle according to claims 12-15, wherein the lubricant includes one or more of silicon oil, polyethylene oxide, polyacrylamide, natural polysaccharide, silicon polyethylene oxide, medicinal agent and/or a blood coagulant.
- 10 18. A dispensing receptacle according to any of claims 13-17 wherein the applicator cooperates with the dispensing receptacle, and preferably wherein the applicator includes an opening for controlling release of the lubricant from the dispensing receptacle.
19. A razor head comprising a lubricating portion, wherein the lubricating portion includes a lubricating material.
- 15 20. A razor head according to claim 19, wherein the lubricating material includes polyacrylate, and preferably wherein the polyacrylate is hydrophobically modified, and preferably wherein the polyacrylate is 3% hydrophobically modified.
- 20 21. A razor head according to any of claims 19 to 20, wherein the lubricating material includes polyacrylate, and preferably wherein the polyacrylate is hydrophobically modified, and preferably wherein the polyacrylate is 3% hydrophobically modified.

FIGURE 1

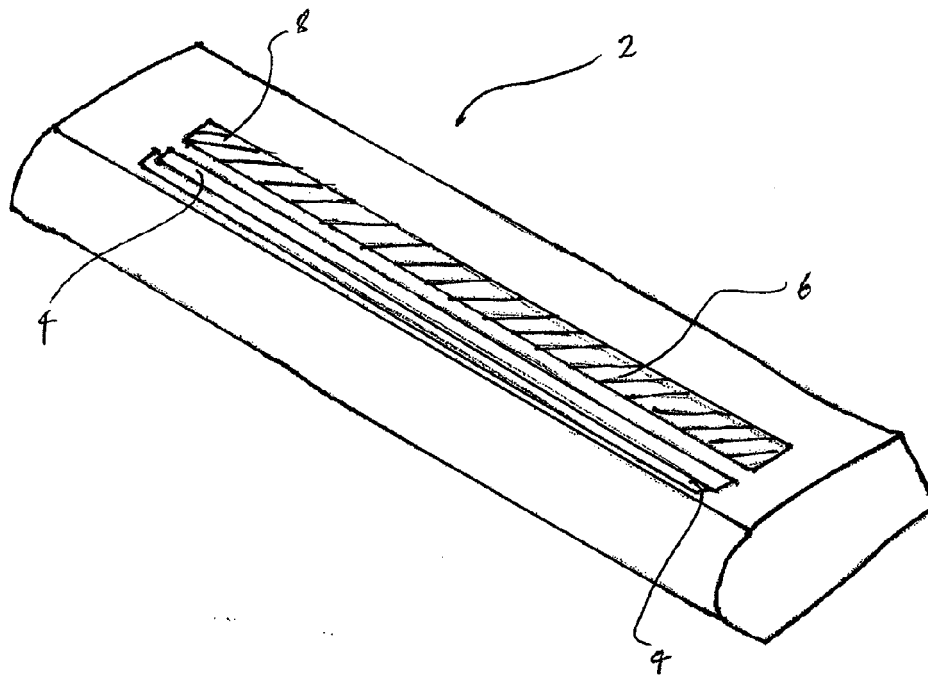


FIGURE 2

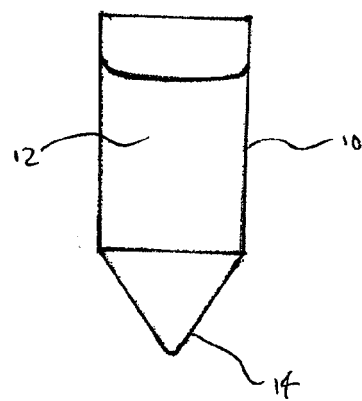


FIGURE 3

