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**Datasheet for the decision  
of 13 November 2008**

**Case Number:** T 0023/07 - 3.2.07

**Application Number:** 99925609.2

**Publication Number:** 1084012

**IPC:** B26B 21/40

**Language of the proceedings:** EN

**Title of invention:**

Razor cartridge with dimpled blade guard

**Patentee:**

AMERICAN SAFETY RAZOR COMPANY

**Opponent:**

The Gillette Company

**Headword:**

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**Relevant legal provisions:**

EPC Art. 54, 56, 100(c), 114(2)

**Relevant legal provisions (EPC 1973):**

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**Keyword:**

"Discretion of opposition division not to admit late filed  
ground - confirmed"

"Late-filed ground - not prima facie relevant"

"Novelty - yes (both requests)"

"Inventive step - no (both requests)"

**Decisions cited:**

T 0986/93

**Catchword:**

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Case Number: T 0023/07 - 3.2.07

**DECISION**  
of the Technical Board of Appeal 3.2.07  
of 13 November 2008

**Appellant:**  
(Opponent)

The Gillette Company  
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**Representative:**

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**Respondent:**  
(Patent Proprietor)

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**Representative:**

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**Decision under appeal:**

Decision of the Opposition Division of the  
European Patent Office posted 20 October 2006  
rejecting the opposition filed against European  
patent No. 1084012 pursuant to Article 102(2)  
EPC.

**Composition of the Board:**

**Chairman:** H. Meinders  
**Members:** P. O'Reilly  
I. Beckedorf

## Summary of Facts and Submissions

- I. Opposition was filed against European patent No. 1 084 012 as a whole based on Article 100(a) EPC (lack of novelty and lack of inventive step).

The opposition division rejected the opposition. It held that the subject-matter of claim 1 of the patent as granted was novel and involved an inventive step. The opposition division further decided not to admit into the proceedings a late-filed ground under Article 100(c) EPC.

- II. The appellant (opponent) filed an appeal against that decision.

- III. The appellant requested that the decision under appeal be set aside and the patent be revoked.

The respondent requested that the appeal be dismissed (main request) or, alternatively, in setting aside the decision under appeal the patent be maintained in amended form on the basis of the set of claims filed as auxiliary request with letter dated 13 October 2008.

- IV. The independent claim of the patent as granted (main request) reads as follows:

"1. A razor comprising a platform (202) for supporting a blade (204), a blade guard (100) disposed on said platform (202) adjacent a cutting edge (204a) of the blade (204) characterised in that said blade guard (100) has a plurality of uniformly sized, discrete,

hemispherically shaped concavities (102) which are spaced from one another, formed therein."

Claim 2 of the main request reads as follows (amendments when compared to claim 3 of the application as originally filed are struck through):

"A razor according to claim 1 wherein the hemispherically shaped cavities (102) have a radius (R) of 0.127mm-0.635mm (0.005"-0.025"), ~~a depth (D) of 0.127mm-0.635mm (0.005"-0.025")~~, and are separated from one another by a distance or width (W) of 0.127mm-0.762mm (0.005"-0.030")."

The independent claim of the auxiliary request reads as follows (amendments when compared to claim 1 of the main request are struck through):

"1. A razor comprising a platform (202) for supporting a blade (204), a blade guard (100) disposed on said platform (202) adjacent a cutting edge (204a) of the blade (204) characterised in that said blade guard (100) has a plurality of uniformly sized, discrete, ~~hemispherically shaped~~ concavities (102) which are spaced from one another, formed therein."

Claim 2 of the auxiliary request reads as follows (amendments when compared to claim 3 of the application as originally filed are in bold or struck through):

"A razor according to claim 1 wherein the ~~hemispherically shaped~~ **concavities** (102) have a radius (R) of 0.127mm-0.635mm (0.005"-0.025"), ~~a depth (D) of 0.127mm-0.635mm (0.005"-0.025")~~, and are separated from

one another by a distance or width (W) of 0.127mm-0.762mm (0.005"-0.030")."

VI. The documents cited in the present decision are the following:

E5: WO-A-96/02369

E13: Collins Concise English Dictionary

E14: Webster's Third New International Dictionary

E15: US-A-4 998 347

VII. The arguments of the appellant may be summarised as follows:

- (i) The ground under Article 100(c) EPC was *prima facie* relevant so that the opposition division should have admitted it into the opposition proceedings. Claim 2 of each of the requests on file adds subject-matter. This claim is based on claim 3 as originally filed. In that claim, however, in addition to the range of values for the radius of the hemispherically shaped cavities there was also given the range of values for their depth. The removal of this information regarding the depth means that there is no restriction on the depth of the cavities which is an unallowable extension of the subject-matter. The fact that the cavities are stated to be hemispherically shaped does not mean that the depth is automatically equal to the radius because the expression "hemispherically shaped" has a meaning broader than exactly half a sphere and must be seen as meaning "resembling a hemisphere". E13 and E14

support this argument for a broad interpretation of the said expression.

- (ii) E15 is a relevant document as it affects the novelty of the subject-matter of the independent claims of the requests or at least its inventive step.
  
- (iii) The subject-matter of claim 1 of each of the requests lacks novelty over E15. In particular E15 discloses hemispherically shaped cavities. In this context it should be recalled that "hemispherically shaped" merely means resembling a hemisphere and does not imply an exact hemisphere. The document indicates that the cavities may be round, oval or arcuate (column 4, line 64 to column 5, line 2). In the next paragraph in the description (column 5, lines 3 to 6) it is indicated that in figures 6 and 7 there are arcuate craters. The craters visible in these figures are shown in plan view and are circular. Because of this the reference to these being arcuate must refer to the vertical cross-section. An arcuate vertical cross-section for a cavity will produce a hemispherically shaped cavity, at least in the broad interpretation of this expression. Indeed the references in the preceding paragraph to round, oval or arcuate must also be referring to the vertical cross-section so that each of these forms would lead to a hemispherically shaped cavity.
  
- (iv) The subject-matter of claim 1 of neither request involves an inventive step. Starting from E5 the

subject-matter of these claims is distinguished by the feature that the cavities are hemispherically shaped or hemispherical, as opposed to the cylindrical shape disclosed in E5. From the introductory part of the patent description it is clear that the desired skin tightening comes from the provision of discrete cavities providing a suction effect that grasps the skin and not particularly from the form of the cavities (see column 2, lines 12 to 39). A second objective is the desire to provide a reservoir for shaving products. For a skilled person wishing to improve the suction effect it is an obvious measure to form the cavities with a hemispherical shape since it is well known that this shape gives the best suction effect. The skilled person will know that this is in any case the shape taken on by the skin in the cylindrical cavity known from E5 so that it belongs to the general knowledge of the skilled person that the hemispherical shape provides the best suction effect.

Also, starting from E15 the subject-matter of neither request involves an inventive step.

VIII. The arguments of the respondent may be summarised as follows:

- (i) The ground under Article 100(c) EPC has been correctly not admitted into the opposition proceedings. The ground is not relevant so that the opposition division were correct not to admit the ground. The original claim 3 included superfluous information since for a

hemispherically shaped cavity the radius automatically defines the depth. It was therefore only necessary to give the range of values for the radius. The extra, identical, range of values for the depth could have given rise to a lack of clarity so that this range was deleted from the claim when it became claim 2 in the amended set of claims proposed for grant.

(ii) E15 is a late-filed document which should not be admitted into the appeal proceedings. The document is not more relevant than the documents already in the proceedings.

(iii) The subject-matter of claim 1 of each of the requests is novel over E15. E15 does not disclose hemispherically shaped concavities. The cavities shown in figures 6 and 7 are only circular in plan view. The argument of the appellant that the reference in the description to these being arcuate must refer to the vertical cross-section cannot be agreed to. If specified shapes - round, oval or arcuate - are meant to mean the shapes when viewed in vertical cross-section then they would produce nonsensical shapes, e.g. the oval shape would be almost completely below the surface. Moreover, since claim 1 of the document indicates that the depressions have a "depth of about 3 - 8 microns" and a "width of between about 50 - 150 microns" they cannot be hemispherically shaped in vertical cross-section. E13 and E14 do not indicate a broad meaning to the expression "hemispherically shaped".



(iv) The subject-matter of claim 1 of each request involves an inventive step. The hemispherical shape of the concavities as claimed provides an advantage over the cylindrical cavities disclosed in E5. When the skin enters the cavities disclosed in E5 it cannot occupy the whole of the cavities as the skin will take a curved shape within the cavity which precludes it from entering into the space adjacent the junction of the bottom and side walls. This void space will reduce the suction effect. Also, the skilled person would not change the shape from the cylindrical shape disclosed in E5 to a hemispherical shape as the purpose of the cavities disclosed in E5 is to hold shaving products and changing the shape to a hemispherical shape would reduce the volume available for this purpose. The provision of hemispherically shaped cavities provides improved suction and there is nothing in the prior art to suggest this shape.

## **Reasons for the Decision**

1. *Admissibility of the ground of opposition under Article 100(c) EPC*
- 1.1 During the oral proceedings before the opposition division the opponent raised for the first time in the proceedings the ground under Article 100(c) EPC against claim 2 as granted. The opposition division considered that the ground was not *prima facie* relevant and hence exercised correctly its discretion under Article 114(2) EPC not to admit the ground.

- 1.2 The appellant argues that the late-filed ground under Article 100(c) EPC should have been admitted into the opposition proceedings as it is *prima facie* relevant and hence should be considered in the appeal proceedings.

Where the opposition division has discretion in its actions, in this case under Article 114(2) EPC, it is the main task of the Board to review whether or not the opposition division exercised its discretion reasonably. The appellant cited decision T 986/93 (OJ EPO 1996, 215) in support of its contention that the ground should be admitted. In that decision the deciding Board when reviewing the decision of the opposition division came to the conclusion that it had not exercised its discretion reasonably since the Board considered that there were indeed strong *prima facie* reasons (see point 2.6 of the reasons) for admitting the late-filed ground. The facts of the present case are different to those on which that decision was taken as will become apparent below.

- 1.3 With regard to the disputed amendment the feature that the concavity is hemispherically shaped was contained in claim 3 as originally filed. This claim referred to the cavities being hemispherically shaped and further indicated that they had a radius (R) of 0.127mm-0.635mm (0.005"-0.025") and a depth (D) of 0.127mm-0.635mm (0.005"-0.025"). Since claim 2 as granted indicated only the range of values for the radius and did not indicate the depth of the cavities the appellant argued that this added subject-matter. The respondent argued that the claim did not add subject-matter since the radius of a hemisphere is by definition the same as its depth so that the depth information was superfluous and hence

possibly ambiguous, so should be deleted to fulfil the requirements of clarity of the claims (Article 84 EPC).

If it is considered that the expression "hemispherically shaped" is intended to mean something close to an exact hemisphere, e.g. within engineering tolerances, then the view of the respondent that the information regarding the depth is redundant would be correct.

If, on the other hand, as argued by the appellant the expression should be interpreted more broadly then in principle the removal of the information regarding the depth could raise a question of added subject-matter since the depth information would no longer be present in combination with the radius information. This interpretation would mean that the depth is no longer linked to the radius on a one-to-one basis. This would allow differing values for the radius and depth to be taken from the two ranges. It would allow for instance that the highest value of the range for the radius - 0.635mm - could be combined with the lowest value for the depth - 0.127mm - and *vice versa*. This would result in shapes ranging from very shallow concavities with a radius five times the depth to very deep concavities with a depth five times the radius, neither of which could seriously be interpreted as hemispherically shaped.

Thus the argument of the appellant leads to a nonsensical result. The appellant recognised this and argued that the skilled person would not consider such extremes as being hemispherical. The argument of the appellant, however, leaves open the point at which the skilled person would consider that the radius and depth values do define a hemispherically shaped cavity.

1.4 In the view of the Board the skilled person considering the definition of a hemisphere and noting that the ranges for each of the depth and the radius have the same end values would reasonably conclude that the value the ranges and depths should be chosen in an identical manner within these ranges because the radius and depth of a hemisphere are identical. This would mean that the inclusion of the same range of values for both the depth and the radius was unnecessary since for a hemispherical shape the depth was automatically known from the radius. This has the result that the failure to repeat the range of values for the depth does not extend the subject-matter.

1.5 The Board concludes that the opposition division exercised its discretion reasonably in considering that the ground was not *prima facie* relevant and therefore not admitting the ground into the opposition proceedings. The ground is therefore not part of the appeal proceedings.

## 2. *Admissibility of E15*

2.1 E15 was filed at the start of the appeal proceedings and thus at the earliest possible point in the appeal proceedings. The document does not essentially change the factual framework since it is filed in connection with the interpretation of the expression "hemispherically shaped" for which, in the opinion of the appellant, the opposition division took too narrow a view.

Since the document discusses the same problem as discussed in the patent in suit - tensioning the skin - it can be considered to be relevant to the discussion of novelty and inventive step.

2.2 The Board therefore decided to admit the document into the proceedings.

3. *Novelty (both requests)*

3.1 The appellant argued lack of novelty based on E15. The crucial point in this matter is whether the craters disclosed in E15 can be considered to be "hemispherically shaped" in the sense of claim 1.

3.2 A first embodiment of E15 discloses a groove and in figure 3 a vertical cross-section of that groove is shown. The cross-section of the groove has a curved form which cannot, however, reasonably be considered to be semi-circular which would be necessary in order to produce a hemispherical shape.

In the paragraph bridging columns 4 and 5 it is explained that the groove may be replaced by discrete craters or dots. It is stated that these may be "round, oval or arcuate" and may be "touching or overlapping each other". Taken as they are written the terms round, oval and arcuate can only have a reasonable meaning if applied to the craters in plan view. Also, the reference to "touching or overlapping" only makes sense if the shapes are described in plan view since it is only in that view that contact or overlapping has a reasonable meaning.

In the following paragraph, i.e. column 5, lines 3 to 6, it is explained that in figures 6 and 7 a "plurality of discrete arcuate craters" are shown. Figures 6 and 7 show plan views of the guard bar with, as is particularly clear in figure 7, a circular shape for the craters. The appellant argued that since the shape as seen in plan view is circular the reference in the description to arcuate must be a reference to its vertical cross-section and hence that the crater must have a hemispherical shape.

The Board cannot follow the argument of the appellant in this respect. It is not logical that a figure that shows a plan view should be described in terms of a vertical cross-section. In fact the description in said paragraph of the crater in the figure being arcuate could simply be inconsistent with what the figure shows.

- 3.3 Even if it were considered that E15 discloses an arcuate shape in vertical cross-section then it does not necessarily follow that this arcuate shape is semi-circular which would be necessary to form a hemispherically shaped concavity. An arc merely indicates that it is a section of a circle. There is no disclosure in the document that the arc forms a semicircle. This view is reinforced by the fact that E15, see claim 1, describes the depressions as having a depth of between about 3 and 8 microns and a width of between about 50 and 150 microns which, even taking the ends of the ranges most favourable to the argument of the appellant, would still produce a depth of only about a third of the radius, i.e. shallow and not hemispherical.

3.4 It is therefore not unambiguously disclosed that the craters described in E15 are hemispherically shaped.

The Board notes that this conclusion would also apply to the "hemispherical concavities" as specified in claim 1 of the auxiliary request.

3.5 Therefore, the subject-matter of claim 1 of each request is novel in the sense of Article 54 EPC.

4. *Inventive step (both requests)*

4.1 The appellant presented arguments starting both from E5 and from E15. For the purposes of the present decision it is only necessary to consider the arguments starting from E5.

4.2 The distinguishing features of claim 1 of each of the main request and the auxiliary request over the razor disclosed of E5 are that the concavities are "hemispherically shaped" or "hemispherical" respectively. This was also the view of the parties. The different wording for this shape as used in the independent claims of the main and the auxiliary request does not play a role in this decision as it is considered that there is no essential difference between their wording, both forms of wording being used in the patent and in the application as originally filed. In the following therefore only the wording used in claim 1 of the main request will be referred to, i.e. "hemispherically shaped".

4.3 In E5 the cavities ("pockets") are principally described as "right circular cylindrical" (see page 4, line 3)

though other cross-section shapes are possible, i.e. hexagonal or elliptical (see page 4, lines 5 to 7). Their depth is stated to be less than their diameter and as an example the depth is stated to be "approximately equal to the pocket radius" (see page 4, lines 7 to 9).

When considering the essential differences between the hemispherically shaped cavities specified in claim 1 and the cylindrical pockets of E5 the Board notes that a hemispherical shape implies certain properties for the cavities. These properties include that the depth equals the radius, that the surface of the concavity meets the surface of the blade guard at approximately 90°, and that the surface is spherically curved, i.e. described by a single value for its radius. The first two of these properties are already present in the cylindrical pockets disclosed in E15 since they are described as "right circular cylindrical with their axes substantially perpendicular to the skin contacting surfaces" (see page 4, lines 2 to 5) as well as having their depth equal to their radius (see page 4, lines 7 to 9). This means that the distinguishing property of the hemispherical shape is the spherical curvature of the surface.

- 4.4 According to paragraph [0007] of the patent in suit the object of the invention is to provide a unique approach to skin tensioning. According to paragraph [0008] this object is further defined as being to use discrete concavities which act as suction cups to produce the desired adhesion which cannot be produced by the prior art ridged guard members. According to paragraph [0009] it is desired to have a further effect of providing a reservoir for shaving preparations. According to



paragraph [0010] these objects are achieved by providing a large number of small concavities. The concavities are then stated to be hemispherically shaped - without explaining why this shape is chosen - and discrete. In the application as originally filed the passage corresponding to paragraph [0010] indicated that the concavities were preferably but not necessarily hemispherically shaped. It is further explained that the concavities act as suction cups that grasp the skin to increase tension when moving the razor over the skin and that they contain a reserve of shaving preparation.

In the description of the embodiments in the patent in suit there are two mentions of hemispherical cavities, in column 3, lines 15 to 20 and in column 4, lines 7 to 10, without there being any indication of any effect due to this shape. In the application as originally filed there is a paragraph bridging pages 5 and 6 which has been deleted in the grant proceedings and which indicated that in place of the hemispherically shaped cavities also cylindrical, cubical, octahedral, or pentahedral cavities can be provided. These shapes were depicted in figures 11A-11D which were also deleted in the grant proceedings.

From the above it follows from the application as originally filed that the suction effect does not depend upon the hemispherical shape of the cavities and that the desired suction properties are also fulfilled by, for example, a cylindrical cavity.

- 4.5 The respondent argued that the hemispherical shape was particularly advantageous in providing better suction.

This would mean that the problem to be solved was to give better suction.

The Board notes that this assertion by the respondent is not based on anything disclosed in the patent nor is it supported by any evidence.

The argument of the respondent is based on the idea that the suction effect works better with the hemispherical shape because the skin will conform to this shape leaving no gaps. The respondent further argued that the cylindrical shape of the prior art leaves a void adjacent the junction of the side wall with the bottom wall which reduces the suction effect.

In the view of the Board these assertions by the respondent are not necessarily justified. The respondent assumes that a void will exist if the cavity is cylindrical. However, given that the purpose of the cylindrical cavity in E5 is to contain a viscous fluid or gel (see page 3, lines 17 to 22) it is more likely that this fluid will occupy the alleged void. Since a viscous fluid or gel is not particularly compressible it is unlikely to have substantial negative effect on any suction effect. Also, according to the patent the purpose of the cavity is both to produce a suction effect and to provide a reservoir for shaving products so that the presence of shaving products in the cavity in any case will mean that the skin entering the cavity cannot take on a proper hemispherical shape, or otherwise the shaving preparation would be "scooped out" immediately.

The Board is therefore not convinced that the feature of the hemispherically shaped cavities actually solves the alleged problem of improving suction. In the absence of proof that the alleged problem is solved the claimed feature must be considered to be a mere alternative to the known cylindrical cavity which produces the same effects, i.e. a suction effect and forming a reservoir for shaving preparations. The Board considers that such an alternative is one which would be recognised by the skilled person as suitable since the skilled person will know that skin entering a cylindrical cavity will naturally take on a hemispherical shape, if the depth of the cavity is equal to the radius of the cylinder, as may be the case in E5.

- 4.6 The respondent also argued that there was a prejudice against changing the shape of the cavity in E5 from cylindrical to hemispherical since the cavity would then have less space for holding shaving preparations which was the stated purpose for the cylindrical cavity disclosed in E5.

The Board cannot agree with this argument. The space which is lost for the purposes of holding shaving preparations is adjacent the junction of the bottom wall and the side wall which is a part of the cavity which in any case cannot be reached by the skin as the respondent itself acknowledged when arguing that the hemispherical shape produces a better suction.

- 4.7 Therefore, the subject-matter of claim 1 of each of the main request and the auxiliary request does not involve an inventive step in the sense of Article 56 EPC.

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

G. Nachtigall

H. Meinders