

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [X] To Chairmen
(D) [] No distribution

**Datasheet for the decision
of 28 July 2009**

Case Number: T 1160/07 - 3.2.07

Application Number: 01979553.3

Publication Number: 1337382

IPC: B26B 21/52

Language of the proceedings: EN

Title of invention:

Method and apparatus for making a shaving razor handle

Patentee:

The Gillette Company

Opponent:

Braunform GmbH

Headword:

-

Relevant legal provisions:

EPC Art. 56

RPBA Art. 13(3)

Relevant legal provisions (EPC 1973):

EPC R. 71a

Keyword:

"Document D10 not admitted in opposition proceedings -
exercise of discretion (incorrect)"

"D10 to be considered as closest prior art (yes)"

"Skilled person - product designer which at least consults
expert in the technology of molding small plastic parts"

"Inventive step (no, all requests)"

Decisions cited:

T 0047/03, T 0281/00, T 1126/97

Catchword:

See points 2.6, 7.4, 8, 8.1 of the reasons.



Case Number: T 1160/07 - 3.2.07

D E C I S I O N
of the Technical Board of Appeal 3.2.07
of 28 July 2009

Appellant: Braunform GmbH
(Opponent) Unter Gereuth 7+14
D-79353 Bahlingen (DE)

Representative: Goy, Wolfgang
Zähringer Strasse 373
D-79108 Freiburg (DE)

Respondent: The Gillette Company
(Patent Proprietor) Prudential Tower Building
Boston
MA 02199 (US)

Representative: Becher, C. Thomas
Hoffmann Eitle
Patent- und Rechtsanwälte
Arabellastrasse 4
D-81925 München (DE)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 18 June 2007
rejecting the opposition filed against European
patent No. 1337382 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: H. Meinders
Members: H.-P. Felgenhauer
E. Dufrasne

Summary of Facts and Submissions

- I. This appeal is against the decision of the opposition division rejecting the opposition against European patent No. 1 337 382.
- II. Oral proceedings before the Board were held on 28 July 2009. The appellant (opponent) requested that the decision under appeal be set aside and the patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed or, in the alternative, that the decision under appeal be set aside and that the patent be maintained on the basis of one of the auxiliary requests 1, 2, 2.1, 3 and 3.1, filed with letter dated 15 May 2009, or of the auxiliary request 4, filed during the oral proceedings, or one of the auxiliary requests 6 and 7, filed with letter dated 15 May 2009, or of the auxiliary request 8, filed during the oral proceedings.

The auxiliary request 5, filed with letter dated 15 May 2009, was withdrawn during the oral proceedings.

- III. **Claim 1 according to the main request** (claim 1 as granted) reads as follows (with characters added by the Board):

- (a) A method of making
- (b) a shaving razor handle

comprising

- (c) molding an inner core of a first plastic at opposed first mold cavities,
- (d) molding an outer portion of a second plastic around said inner core at opposed second mold cavities, and
- (e) molding at least one elastomeric grip portion on said outer portion at opposed third mold cavities.

Claim 1 according to auxiliary request 1 has the same wording as claim 1 according to the main request.

Claims 1 according to auxiliary requests 2 and 3 are identical and differ from claim 1 according to the main request in that features (c) - (e) read as follows (here as in the following amendments are indicated in bold):

- (c) molding an inner core of a first plastic at opposed first mold cavities, **said inner core comprising an elongated inner part,**
- (d) molding an **elongated** outer portion of a second plastic around said inner core at opposed second mold cavities, and
- (e) molding at least one elastomeric grip portion on said **elongated** outer portion at opposed third mold cavities.

Claims 1 according to auxiliary requests 2.1 and 3.1 differ from claims 1 according to auxiliary requests 2 and 3 in that following feature (f) has been added

- (f) **so that the outer surface of the shaving razor handle is formed by the elongated outer portion and the elastomeric grip portion.**

Claim 1 according to auxiliary request 4 reads as follows:

- (a) A method of making
- (b) a shaving razor handle

comprising
- (c) molding an inner core of a first plastic at opposed first mold cavities **by injecting the first plastic through a gate (64) into the first mould cavities (48), the molded inner core including a first end (26), a concave surface (22) at the opposite end, and a central portion (28) therebetween, the gate (64) being adjacent the concave surface (22),**
- (d) molding an outer portion of a second plastic around said inner core at opposed second mold cavities, **the first end (26) of the molded inner core being thinner than the end (18) of the outer portion molded around the first end (26) of the inner core, and the central portion (28) of the molded inner core being thinner than a central**

portion of the outer portion molded around the central portion (28) of the inner core, and

- (e) molding at least one elastomeric grip portion on said outer portion at opposed third mold cavities.

Claims 1 according to auxiliary requests 6 and 7 are identical and read as follows:

- (a) A method of making
- (b) a shaving razor handle

comprising
- (c) molding an inner core **having a through hole (30)** of a first plastic at opposed first mold cavities,
- (d) molding an outer portion of a second plastic around said inner core at opposed second mold cavities **by injecting the second plastic into the through hole and directing the second plastic to the underside of the inner core, and**
- (e) molding at least one elastomeric grip portion on said outer portion at opposed third mold cavities.

Claim 1 according to auxiliary request 8 reads as follows:

- (a) A method of making
- (b) a shaving razor handle

comprising

- (c) molding an inner core of a first plastic at opposed first mold cavities comprising a frustoconical protrusion (60), by injecting the first plastic through a gate (64) adjacent the concave surface (22) into the first mould cavities (48), the molded inner core including a first end (26), a concave surface (22) at the opposite end, a central portion (28) therebetween, and a through hole (30) provided by the frustoconical protrusion (60),

- (d) molding an outer portion of a second plastic around said inner core at opposed second mold cavities by injecting the second plastic through a tubular member (72) at the end of a gate channel (70) extending into the through hole (30) of the inner core (24) in order to direct the second plastic to the underside of the inner core, the first end (26) of the molded inner core being thinner than the end (18) of the outer portion molded around the first end (26) of the inner core, and the central portion (28) of the molded inner core being thinner than a central portion of the outer portion molded around the central portion (28) of the inner core, and

- (e) molding at least one elastomeric grip portion on said outer portion at opposed third mold cavities.

IV. The following documents are referred to in the present decision

a) filed during the opposition proceedings:

D2: DE-A-198 58 102

D8: US-A-6 108 869

D9: US-A-5 573 791

D10: Gastrow "Der Spritzgieß Werkzeugbau in 130
Beispielen", 5th edition, Carl Hanser 1998,
pages 308 - 310

D10.1: Drawing No. 96.055.1 "3 Stationen 4-fach- Form
für SOFT GRIP CHISEL 53522" dated 1 October 1996

D10.2: Invoice 9700265 dated 15 April 1997 concerning
order no. 96.055.1

D11.1: Stanley "HAND TOOLS PRICE LIST", Copyright
Stanley Tools 1998

D11.2: Invoice Stanley dated 18 April 1998 concerning
order no. 66300-5972687

b) filed during the appeal proceedings:

D12: US-D-403 114

D13: US-D-407 851

D14: US-D-408 101

D15: US-D-417 034

D16: DE-U-295 08 990

D17: DE-A-43 11 186

- V. According to the impugned decision the opposition division considered documents D8 - D10 (D10.1 and D10.2 have not been explicitly mentioned) and the alleged public prior use according to D11.1 and D11.2 (in the following: D11) as not being more relevant than the prior art already in the file and for that reason did not consider the documents D8 - D10, nor the alleged public prior use according to D11.

In the decision under appeal it is stated that novelty of the claims was not disputed during the opposition proceedings and that none of the prior art documents discloses all features of the patent in suit. Consequently the subject-matter of the claims of the patent in suit is novel (reasons, point 3).

According to the decision under appeal the subject-matter of claim 1, and correspondingly of claims 12 and 13, involves an inventive step starting from D6 as closest prior art.

Concerning the disclosure of D6, and likewise of D2, the decision is based on the understanding that the method step referred to in these documents as "Umspritzung" generally means that plastic is injected on a first part. As compared to the subject-matter of claim 1, according to the impugned decision this known method step does not mean that plastic is moulded as "an outer portion around an inner core".

The objective technical problem to be solved in view of the method according to D2 or D6 has been considered as aiming at a reduction of the cycle time, a quicker and more homogenous curing of the plastic material as compared to a single step injection and the possibility to maintain a textured surface finish which, in case of a thick molded part, might melt due to heat dissipation from this part.

The decision under appeal concludes that none of the cited (and considered) prior art documents suggests the method as defined in claim 1, comprising the steps of molding an outer portion around an inner core and of molding an elastomeric grip portion on said outer portion.

VI. The facts, evidence and arguments essentially relied upon by the appellant can, as far as they are relevant to the present decision, be summarised as follows:

- (a) The opposition division did not exercise its discretion correctly in not admitting the evidence according to D8 - D11 into the opposition proceedings.
- (b) Documents D12 - D17 have been introduced in the appeal proceedings in response to the auxiliary requests filed. These documents should thus be admitted into the appeal proceedings. Likewise document D10 should be admitted.
- (c) Although the subject-matter of claim 1 according to the main request cannot be considered as involving an inventive step with respect to the

method disclosed by document D2, the method known from document D10 comes even closer and needs to be considered as the appropriate starting point in the examination of inventive step.

The subject-matter of claim 1 according to the main request differs from the method according to D10 only with respect to the parts to be molded, namely a shaving razor handle according to claim 1 as opposed to a chisel handle according to D10. Both belong to the group of small molded plastic parts which are, except for differences with respect to the mold cavities which are specific to the part in question, essentially molded using the same method, like e.g. the one disclosed in D10. There is no reason why the skilled person, who has at least knowledge in the technology of molding small plastic parts or who consults an expert in this field when devising a method for the molding of such parts, would not consider D10. Since it is apparent that adapting the method according to D10 to the molding of shaving razor handles essentially only requires that the cavities have the appropriate shape, such an adaptation and consequently the method according to claim 1 of the main request cannot be considered as involving inventive step.

- (d) The further effect according to the patent in suit and relied upon by the respondent, according to which by injecting the plastic in two steps the formation of the parts is such that a textured surface finish is maintained which otherwise would re-melt to a smooth surface by dissipation of heat

from a thick part if molded in one step only, cannot be considered in the evaluation of inventive step, because this effect does not find a corresponding feature in any of the claims 1 according to all requests. Furthermore such an effect comes automatically, not only with the method according to claim 1, but also with the method as known from D10.

- (e) Likewise the subject-matters of the claims 1 according to the auxiliary requests, as far as they differ from the subject-matter of claim 1 according to the main request, do not involve an inventive step since the additional features of these claims, relating to the shape of the shaving razor handle and/or the requirements concerning the injection of plastic materials into the mold cavities, are altogether features necessary to more completely define the methods according to the various claims 1 and moreover these features do not go beyond those required and to be expected by applying regular design practice.

VII. The facts, evidence and arguments essentially relied upon by the respondent can, as far as they are relevant to the present decision, be summarised as follows:

- (a) The opposition division did not exercise its discretion wrongly in not admitting the evidence D8 - D11 into the opposition proceedings. The reason is that this evidence has been filed late and furthermore that it is not *prima facie* relevant since it does not come closer to the subject-matter of claim 1 according to the main

request than the documents already in the opposition proceedings, like D2 and D6. In examining whether the opposition division has exercised its discretion correctly the Board should only review whether or not the opposition division has applied the correct criteria, which apparently has been the case. In that evaluation, the Board should not consider whether itself would have exercised its discretion differently.

- (b) It can be left open whether documents D12 - D17 should be admitted in the appeal proceedings in response to the auxiliary requests filed, the reason being that these documents relate only to the exterior shape of the parts to be molded. These documents thus do not have any significance with respect to the molding of such parts which, according to the subject-matter of claim 1, involves the partition of the shaving razor handle in a number of portions to be molded sequentially. This applies likewise with respect to document D8 which, for corresponding reasons, should likewise not be admitted into the appeal proceedings.

- (c) Document D10, which the opposition division did correctly not admit into the proceedings, should be disregarded due to the fundamental differences between the type of parts to be molded, namely the shaving razor handle according to claim 1 and the chisel handle according to D10. These parts differ essentially with respect to their shapes and their volume, such that the person skilled in the art, who for the present invention is the designer of shaving razor handles, would have disregarded this

known method when devising a molding method for the shaving razor handles concerned.

Even if the person skilled in the art would have considered document D10 it would not have been led in an obvious manner to the method according to claim 1. The reason is that the chisel handle according to D10 is provided with a large open hollow interior section in contact with a tooling core which helps to cool the part molded thereon. Based on this product specific cooling approach the person skilled in the art would not have attempted to use the molding method according to D10 for parts which, like the shaving razor handles concerned, neither have an open hollow interior section of the kind provided according to D10, nor a tooling core enabling cooling.

- (d) In the examination of inventive step it furthermore needs to be taken into account that according to the patent in suit, by injecting the plastic in two steps, the formation of the parts is not only much faster than it would be if the entire required amount of plastic was injected in a single step, but that moreover the fast curing can desirably provide for maintaining a textured surface finish which might otherwise re-melt to a smooth surface by dissipation of heat from a thick part if molded in one step only. Concerning this effect it needs to be taken into consideration that it comes automatically with the method according to claim 1, so that such an effect does not need to be separately defined in this claim. Furthermore it needs to be taken into

consideration that the prior art remains completely silent concerning this effect and thus fails to give an indication towards using it.

- (e) This applies likewise with respect to the subject-matters of the claims 1 according to the auxiliary requests. Furthermore no suggestion concerning the additional features of these claims 1, relating to the shape of the shaving razor handles and/or requirements concerning the injection of plastic material into the cavities, is given by the cited prior art.

VIII. In the annex to the summons to oral proceedings dated 13 March 2009 the Board gave its preliminary opinion. With respect to the non-admittance of the evidence D8, D9 and D11 it indicated that it did not appear that the opposition division exercised its discretion wrongly. With respect to the non-admittance of D10 it was indicated that it may need to be discussed whether the opposition division considered correctly those factors legally relevant or ignored incorrectly those which were. Furthermore with respect to the method according to D2 it was indicated that it appeared that the advantages associated with the subject-matter of claim 1 according to the impugned decision were already obtained in that known method.

Reasons for the decision

1. *Procedural aspects*

At the beginning of the oral proceedings before the Board the chairman indicated that, since independent method claims are present as claim 1 in every one of the requests and novelty is not in dispute, the proceedings would concentrate first on inventive step in respect of these claims, with due consideration of the requirements of Articles 84 and 123(2) EPC concerning any amendments made.

As can be derived from the following the Board came to the conclusion that none of the methods defined by the claims 1 of all requests involved an inventive step (Article 56 EPC). Consequently, the patentability of the subject-matter of any other independent claims comprised in some of the requests and associated procedural aspects, namely admittance of the ground of opposition - lack of novelty - with respect to apparatus claims 13 or remittal of the case to the department of first instance, needed not be dealt with.

2. *Admittance of documents D8 - D11 in first instance*

2.1 Documents D8 - D11 have been referred to by the appellant in its letter dated 13 March 2007 during the opposition proceedings, i.e. after the summons to oral proceedings dated 9 November 2006 had been issued.

D8 formed the starting point for an objection of lack of inventive step of the method of claim 1, as it disclosed the molding of toothbrushes, which were

products similar to shaving razor handles. D8 was considered in combination with D9, relating to the molding of parisons.

In a second line of argumentation regarding lack of inventive step of the method of claim 1, D10 was referred to as disclosing the principle of the claimed method. The only distinguishing feature was that the claimed molding method resulted in a shaving razor handle whereas the method of D10 produced a chisel handle. However, companies manufacturing machinery for the molding of small plastic parts are not limited to manufacturing molds for only one specific plastic part, but do so for a variety of such parts. Consequently the relevant skilled person is the one working in the field of small part injection molding, who takes, within his regular design practice, into consideration any kind of machinery molding small parts of about the same size and volume. In this respect shaving razor handles and chisel handles are comparable small parts.

The molds according to the alleged public prior uses based on D10.1 and D10.2 and on D11.1 and D11.2 functioned in principle like the mold of D10.

- 2.2 The respondent objected, with letter dated 19 March 2007, against the consideration of documents D8 - D10 as well as against the consideration of the public prior uses due to their late filing and also due to lack of relevance.
- 2.3 According to the impugned decision the late filing of these documents did not amount to an abuse of procedure.

Concerning their relevance, however, D8 was considered as no more relevant than documents D2 and D6 already in the proceedings and the teaching of document D9 was considered as not applicable to handles of toothbrushes as shown in documents D2, D6 or D8, nor to shaving razor handles as in the patent in suit. Consequently D8 and D9 were not admitted (reasons, point 2.3.1).

According to the impugned decision D10 discloses a chisel handle which, similar to the parisons according to D9, has a circular symmetry around its central axis. Thus in the two-step molding of such a handle the second layer necessarily has to be molded around the first layer. The impugned decision states that for this reason, already referred to in respect of D9, as well as in view of the relatively large section and thickness of a chisel handle, D10 does not represent an appropriate prior art to start from when the production of a shaving razor handle is envisaged.

D11.1 and D11.2 were considered filed merely to show that handles according to D10 had actually been produced, which information was of no relevance for the patent in suit.

These documents were therefore disregarded according to Article 114(2) EPC.

2.4 The opposition division thus has exercised its discretion to not admit the pieces of evidence D8 - D11 considering as criteria whether the late filing amounts to an abuse of procedure and whether these documents are of *prima facie* relevance.

2.5 The Board agrees with the respondent that if the way in which the department of first instance has exercised its discretion is challenged in an appeal, it is not the function of the Board of Appeal to put itself in the place of that department and consider how it would have exercised its discretion itself. A Board should only overrule the way in which the discretion was exercised if it concludes that it was done according to the wrong principles, or without taking into account the right principles, or in an unreasonable way (Case Law of the Boards of Appeal, 5th edition 2006, VII.D.6.6)

2.6 In exercising its discretion to not admit documents filed after expiry of the period for opposition an opposition division has to take into account the relevant facts and circumstances of the case.

The question of abuse of proceedings has been addressed correctly by the opposition division (see point 2.3 above). Others circumstances and facts which should be considered are e.g. whether the documents in question are relied upon in direct response to the communication annexed to the summons for oral proceedings and whether they are *prima facie* relevant.

2.6.1 Concerning the first aspect mentioned above the impugned decision is, however, silent. In the minutes of the oral proceedings before the opposition division it is indicated "regarding the matter of the late filing of documents D8 to D11, the opponent explained essentially that this was in reaction to the provisional opinion set out by the opposition division in its annex to the invitation to the oral proceedings" (page 1, paragraph 5).

Since concerning this circumstantial aspect the impugned decision is totally silent and the minutes only repeat the argument of the appellant, i.e. no conclusion on this issue is given by the opposition division, the Board can only conclude that this aspect was not considered in the end.

It is not appropriate to express on the one hand a preliminary opinion in the annex to the summons sent by virtue of Rule 71a EPC 1973, as required by the Guidelines for Examination (E-III, 6), setting a time limit for filing any submissions expiring 19 March 2007 and on the other and not to admit such submissions and their supporting evidence filed 14 March 2007, i.e. before the set date, without reflecting on the question whether they were a reaction to the opposition division's opinion (see in this respect also T 281/00 of 20 August 2002, not published in OJ EPO, point 2.4 of the reasons).

- 2.6.2 Concerning the second aspect, namely the *prima facie* relevance, the Board notes that according to the impugned decision (reasons, point 2.3.2) the chisel handle according to D10 has a circular symmetry around its central axis, resulting in the conclusion that D10 cannot be considered as an appropriate starting point with respect to a method relating to the production of a shaving razor handle.

In this respect the Board is of the opinion that by relying on this aspect of the known chisel handle emphasis has been placed on a feature which, however, lacks any correspondence with the subject-matters of

claims 1 of all requests then on file (main request and five auxiliary requests), which neither comprise a corresponding feature defining any cross-sectional shape of the shaving razor handle nor do they imply lack of symmetry of this handle.

Consequently the opposition division has examined the *prima facie* relevance of document D10 in a manifestly wrong manner, by considering facts which are irrelevant in this connection.

- 2.7 Thus, for the reasons given above, the opposition division has exercised its discretion with respect to the non-admittance of document D10 without taking into account the right principles (point 2.6.1) as well as according to wrong principles (point 2.6.2).

For the above reasons D10 is to be considered as forming part of the opposition - and thus appeal-proceedings. Remittal of the case in this event has not been requested by the parties.

- 2.8 As can be derived from the following, the subject-matters of the claims 1 according to all requests do not involve an inventive step, starting from the method according to D10 as closest prior art. In view of this result it need not be further examined whether the opposition division exercised its discretion appropriately with respect to documents D8 and D9 and the alleged public prior uses according to D10.1, D10.2 and D11.1, D11.2 respectively. Concerning the admittance of D8 in the appeal proceedings see point 4.1 below.

3. *Admissibility of requests*

- 3.1 With letter dated 15 May 2009 the respondent has (re)filed the auxiliary requests as indicated above (cf. point II).

The appellant objected to the admission of these requests mainly for the reason that the independent claims in subsequent requests were not progressively limiting the subject-matter in a convergent manner but instead defined subject-matters which went in different directions, resulting in a non-converging debate.

- 3.2 Firstly, the Board notes that the requests numbered 1, 2, 2.1, 3 and 3.1 have already been filed in the opposition proceedings with letter dated 2 April 2007 and have been refiled in reply to the appeal with letter of 3 March 2008, thus are not new to the appellant.

- 3.3 The Board assumes the appellant's reference to the necessity of having a converging debate when auxiliary requests are filed relates to the present Board's decision T 47/03 of 27 September 2005 applying such a principle, as previously elaborated in T 1126/97 of 13 December 2001 (both not published in OJ EPO).

The present case has the above-mentioned auxiliary requests 1, 2, 2.1, 3 and 3.1 relating principally to the further embodiments of the shaving razor handle.

Auxiliary request 4 relates to the further embodiment of the shaving razor handle with certain parts of **the**

inner core being thinner than the outer portion, as well as of the first mold cavity having a gate.

Auxiliary requests 6 and 7 relate to the further embodiment of the shaving razor handle's **inner core having a through hole and injecting the outer portion via the through hole.**

Auxiliary request 8 **combines the embodiments** of auxiliary requests 4 and 6.

- 3.4 In view of the above, the appellant could have a point with respect to auxiliary requests 4, 6, 7 and 8. However, the present case differs from the above cited cases in that these requests were filed with letter of 15 May 2009, i.e. more than two months before the oral proceedings (T 49/03 concerned requests filed just one month before the oral proceedings; in T 1126/97 the requests were filed at the oral proceedings). They further concern features which could easily be understood and dealt with without adjournment of the oral proceedings (Article 13(3) RPBA).
- 3.5 In any case, in view of the outcome of the examination of inventive step of the subject-matters of the claims 1 of all requests, of which auxiliary requests 4 and 8 have been further amended during the oral proceedings before the Board in reply to the latter's clarity objections, the issue of admittance of these requests, however needs not to be decided upon.

4. *Documents referred to in the appeal proceedings*

4.1 In view of the auxiliary requests discussed above (cf. point 3.3) documents D12 - D15 have been referred to by the appellant in its letter dated 29 June 2009 in connection with the elongated form of the handle and the thinner portion of the inner core. D8, which, as indicated above (cf. point 2.8), has not been admitted in the opposition proceedings, as well as D16 and D17 were referred to in connection with the feature of the inner core having a through hole.

Exercising its discretion the Board, considering that these documents have been filed in timely response to the above-mentioned amended sets of claims, admits these documents.

4.2 The photos F1, F2 filed with letter dated 12 June 2009 were no longer relied upon by the appellant in the oral proceedings, nor are they relevant for the present decision, with the result that no decision on their admissibility needs to be taken.

5. *Subject-matter of claim 1 - main request*

Claim 1 of the main request (patent as granted) has the following features

- (a) a method of making
- (b) a shaving razor handle

comprising

- (c) molding an inner core of a first plastic at opposed first mold cavities,
- (d) molding an outer portion of a second plastic around said inner core at opposed second mold cavities, and
- (e) molding at least one elastomeric grip portion on said outer portion at opposed third mold cavities.

It is undisputed that method claim 1 comprises features defining **a method of molding a product**, a feature which is directed to the **definition of the product to be molded** and features concerning the **adaptation of the method to the particular product to be molded**.

Accordingly, features (a) and (c) - (e) are directed to method steps in making a product (b) by molding an inner core at opposed first mold cavities (feature (c)), an outer portion around said inner core at opposed second mold cavities (feature (d)) and at least one elastomeric grip portion on said outer portion at opposed third mold cavities (feature (e)).

Feature (b) is directed to the particular product, namely a shaving razor handle, to be molded.

Features (c) - (e) define, in addition to the method steps as indicated above, particular elements of the product made during the various method steps and thus define how the method and the product are mutually adapted to each other. Consequently the product, namely the shaving razor handle, comprises three elements,

namely an inner core (feature (c)), an outer portion (feature (d)) and at least one elastomeric grip portion (feature (e)).

6. *Document D10*

6.1 It is contested whether document D10 qualifies as closest prior art or as a piece of further prior art to be considered in the examination of inventive step.

Contrary to the opinion expressed by the respondent the Board does not find faulty the view of the appellant that document D10 constitutes prior art in the same technical field as it is the case for the method according to claim 1 of the patent in suit.

This view is based on the consideration that for small plastic parts to be manufactured by injection molding, be it shaving razor handles according to claim 1, tooth brushes as referred to in D2 or chisel handles as referred to in D10, the molding will be performed using essentially the same method steps and the same apparatus. Any differences between the apparatuses used merely result from differences in the shape and size of the specific parts to be molded, i.e. they differ essentially only with respect to their molding cavities.

6.2 Concerning the disclosure of D10 the part to be molded according to this document is a handle for a chisel for working wood, in the following addressed as chisel handle.

6.2.1 The chisel handle according to D10 comprises a base body with a deep blind hole for the insertion of the

chisel shaft and an elastomeric grip portion formed onto the base body (page 308, left column, paragraphs 1 and 2). The handle referred to has a large cross-section as well as, in the grip area, a smooth transition from a small round cross-section to a massive, quadratic cross-section (page 308, left column, paragraph 1).

Concerning the shape of the chisel handle according to document D10 it is undisputed that the blind hole serves two different purposes. The first, effective during molding, is to provide attachment to the star wheel (1) by means of the tooling core (3), thus allowing the transfer of a partially molded chisel handle from one cavity to the next as the molding of the subsequent layers proceeds. After completion of the handle this blind hole serves its second purpose: the insertion of the shaft of a chisel to finish the tool (page 308, left column, paragraph 2).

- 6.2.2 In the method of making the chisel handle according to D10 a first layer of material is molded around the tooling core, thus forming the deep blind hole in the base body for the chisel shaft, upon which subsequently a second and a final layer (the latter only in part, forming the grip portion) are molded. Each of the individual moldings is performed in an associated molding cavity, wherein transfer between the individual mold cavities is provided by means of the rotatable star wheel to which the tooling cores are attached (page 308, left column, paragraph 2; right column, paragraph 2: "Ablauf eines Zyklus"; page 310, left column, paragraphs 1 - 3).

The second layer is molded around the first layer (page 310, left column, paragraph 2), which is identical to what is claimed for step (d) and which, more importantly, makes D10 more relevant prior art than the document D6 used by the opposition division.

6.2.3 Concerning advantages obtained by the disclosed method it is indicated that by molding the base body in two separate molding steps (first and second layers) the cycle time can be considerably reduced compared to molding the base body in one step; this approach also has a very positive influence on the quality of the molded parts (page 308, right column, last paragraph; page 310, left column, paragraph 1).

6.2.4 With respect to the manner in which cooling is effected during molding it is indicated that the ribs of the base body contribute to better cooling (page 310, left column, paragraph 1). Furthermore it is indicated that a constant cooling rate for the molded parts is to be guaranteed to avoid their distortion and that considerable attention has to be paid to the cooling of the star wheel via which the tooling cores will be cooled (page 310, right column, last paragraph).

7. *Person skilled in the art*

7.1 It has been disputed who in the present case is to be considered the person skilled in the art.

7.2 It is common ground that in the development or design of plastic parts such as shaving razor handles according to the patent in suit or chisel handles according to D10, the **product design aspect** is

important, determining the shape and the structure of the specific part.

In this respect the Board endorses the opinion of the respondent insofar as that the product design is primarily the task of product designers, which are familiar with the characteristics of the specific part to be designed and that due to differences in these specific characteristics, e.g. based on the intended use of such a product, the product designer designing shaving razor handles and the product designer designing chisel handles need not necessarily be one and the same person.

It is further undisputed that considering the development of parts of the kind concerned on a time scale, the **product designer** is active from the very beginning of the development or design of such a product. In this respect the Board further considers the opinion of the respondent to be correct that already during the design phase of a specific part attention will be paid to the method, at present the molding method, by which this product will eventually be manufactured.

However, the Board finds that towards the end of the product design phase the **manufacturing** of such a part, although a matter of concern already earlier on, comes more and more into focus and then remains the predominant issue.

7.3 Claim 1 concerns solely the manufacture of shaving razor handles as the specific part concerned. This

applies correspondingly with respect to D10 which discloses a method for manufacturing chisel handles.

Concerning the knowledge required with respect to the **manufacturing aspect** it can be left open to what extent the product designer is aware of the possibilities, advantages and constraints underlying the molding methods concerned, since in view of the Board, irrespective of his/her own knowledge, the **product designer** in the end will **consult an expert in the technology of molding small plastic parts**, a field of technology encompassing not only shaving razor handles according to claim 1, but also chisel handles according to D10 or, as discussed during the oral proceedings, toothbrushes according to D2/D6.

- 7.4 The **person skilled in the art** for assessing inventive step of the presently claimed method thus can be considered as being a product designer specialized in the specific part to be manufactured who, if not forming a **team** with an **expert in the technology of molding of small plastic parts**, will at least consult such an expert.

In either case it is the **knowledge of the expert in the technology of molding small parts** which is determinative for the choice of the appropriate manufacturing method.

8. Consideration of document D10

- 8.1 In view of the above considerations regarding the person skilled in the art to be considered for the present invention and the fact that D10 belongs to the

- technical field of molding small plastic parts the skilled person will consider D10 in search of an appropriate method for molding a shaving razor handle.
- 8.2 This is despite the fact that the methods according to claim 1 and according to D10 produce different products, because as can be derived from the following, these methods do not essentially differ in the method steps employed.
- 8.3 For the respondent's argument that the skilled person in search of a production method for a shaving razor handle would not even consider D10, see below point 12.3 regarding the difference in the products molded and point 12.4 regarding the necessary cooling via the long tooling core.
9. *Inventive step*
- 9.1 Concerning the comparison of the method according to claim 1 as granted of the patent in suit and the method according to D10 the parties were of different opinions concerning the question of whether or not the part molded by the known method is provided with an inner core as defined by feature (c).
- 9.2 According to the appellant in D10 the portion which is molded in a first step around the tooling core needs to be considered as the claimed inner core of a first plastic molded at first mold cavities. Consequently the first molding step according to D10 complies with the first molding step as defined by feature (c) and results in a molded inner core.

According to the respondent the method according to D10 differs from the one defined by claim 1 in that an inner core as defined by feature (c) is not the result of the first molding step disclosed in D10 but that the inner core in this known method is the tooling core itself.

- 9.3 The Board does not share this view and is of the opinion that the argumentation of the appellant in this respect is correct.

It is not the tooling core which is to be equated with the inner core according to feature (c), since the tooling core does not form part of the chisel handle to be made by the known method of D10, but is part of the apparatus used in performing that method. Further, an appropriate comparison of the two methods requires that in each case elements of the same category are compared, which means that the inner core molded according to feature (c) has to be compared with the portion of the chisel handle molded in a first step using opposed first mold cavities, according to the method as disclosed by D10.

- 9.4 Following the wording of the method according to claim 1 as granted (main request) document D10 thus discloses

(a) a method of making

(b) **a specific part**

comprising

- (c) molding an inner core of a first plastic at opposed first mold cavities,
- (d) molding an outer portion of a second plastic around said inner core at opposed second mold cavities, and
- (e) molding at least one elastomeric grip portion on said outer portion at opposed third mold cavities.

The method according to claim 1 thus differs from the method according to D10 only with respect to the specific part to be molded. According to feature (b) of claim 1 this is a shaving razor handle, according to D10 it is a chisel handle.

10. *Problem to be solved*

10.1 Concerning the formulation of the problem to be solved by the subject-matter of claim 1 starting from the method according to D10 as closest prior art the parties are of different opinions as to which effects need to be considered in this respect.

10.2 The Board concurs with the view of the appellant that, based on **distinguishing feature (b)**, the **objective technical problem** to be solved starting from the method according to D10 is **how to adapt the known method** to the molding of a different product, namely to **the molding of a shaving razor handle**.

10.3 In this connection the Board notes that the advantage referred to in the patent in suit, namely that by

injecting the plastic in two steps the formation of the part is much faster than it would be if the entire amount of plastic were injected in a single step (column 1, lines 48 - 55) - which has been considered by the opposition division in connection with the formulation of the problem (cf. decision under appeal, reasons point 4.1) - is already obtained by the method according to D10 (cf. page 308, right column, first paragraph of the chapter "Kavitäten" and page 310, first paragraph).

10.4 The further advantage referred to in the patent in suit (column 1, lines 55 - 58), relied upon by the respondent and likewise considered in the decision under appeal (reasons point 4.1), according to which fast curing can desirably provide for maintaining a textured surface finish which otherwise might re-melt to a smooth surface by dissipation of heat from a thick part if molded in one step only, cannot be considered in the formulation of the technical problem to be solved. The reason is that claim 1 does not, neither with respect to the shaving razor handle as defined by feature (b) nor with respect to the method of moulding defined by features (c) - (e), comprise a feature which, in case it is a distinguishing feature, could support the formulation of a problem based on this alleged beneficial effect.

10.5 The problem defined above (cf. point 10.2) is solved by the method according to claim 1 which, by its feature (b) is directed to the molding of a shaving razor handle. Implicit to this solution is that the molding steps according to features (c) - (e) are performed using mold cavities which are properly adapted to the

product specific requirements of a - not further defined - shaving razor handle.

11. *Obviousness*

- 11.1 The Board considers the utilisation of the method for molding chisel handles according to D10 for the molding of shaving razor handles as being obvious.

The reason is that, although the method according to D10 produces a different specific part, it is still a method for molding small plastic parts (cf. point 6.1 above).

Such a method always requires careful adaptation to the nature of the specific part to be molded. The Board agrees with the respondent that such an adaptation can be elaborate. Irrespective of the effort involved in such an adaptation the Board, however, considers that such adaptation requires only routine investigations which do not require the application of inventive skills.

- 11.2 It is also considered normal practice for the person skilled in the art of molding small parts that if a different part is to be molded using the method of D10, product specific adaptations will have to be made (even if only different chisel handles are considered). The general approach of the method disclosed in D10 will, however, be maintained, as it is responsible for the advantages obtained.

Consequently, utilising the method according to D10 at first an inner core will be molded as defined by

feature (c) - cf. point 9.4 above - followed by molding of an outer portion around said inner core as defined by feature (d) and finally at least one elastomeric grip portion will be molded on said outer portion (feature (e)), the mold cavities used in each of the three molding steps being adapted with respect to the part to be molded.

- 11.3 It is likewise evident that in adapting the known method the amount of plastic used in the first and second molding step will be apportioned such that an effective cooling can be obtained, i.e. one in which the cooling time is approximately the same for the inner core and the outer portion.

Consequently the method according to claim 1 as granted does not involve an inventive step in view of the method disclosed in document D10 (Article 56 EPC).

12. *The respondent's arguments*

The above evaluation holds true considering the arguments of the respondent.

- 12.1 The main argument of the respondent is that the person skilled in the art would not have considered the method according to document D10 when looking for an appropriate method for molding a shaving razor handle.

This argument, however, does not take into account that the molding of chisel handles as disclosed in D10 and the molding of shaving handles according to the patent in suit, belong to one and the same technical field of molding small plastic parts (cf. point 6.1 above). Nor

does it consider the definition of the appropriate person skilled in the art, namely one having either first hand knowledge concerning the technology of molding small plastic parts or having access to such knowledge by consulting an expert in this technology (cf. point 7.4 above).

12.2 A further argument of the respondent is that the product designer of shaving razor handles would not necessarily split up the handle such that it can be moulded in sequential steps. Whether the product designer would do so is immaterial as the Board considers in this connection that the method according to D10, as seen by the skilled person, clearly is advantageous by its molding the part not in one single step in a single mold cavity, but in a step by step mode, sequentially transferring the previously molded part from one mold cavity to the next. This is advantageous since the time required for cooling and consequently the cycle time can be reduced (cf. page 308, right column, first paragraph of the section "Kavitäten").

12.3 Another argument of the respondent focuses on the difference between a shaving razor handle and a chisel handle with respect to shape and volume.

In this respect it needs, however, to be considered that on the one hand the shape of the shaving razor handle is not further defined in claim 1 and on the other hand it is well within the application of normal skills of the skilled person to properly take account of such part specific requirements. This only needs to be done via the design of the molding cavities because,

as indicated above (cf. point 9.4), the method steps as such do not differ between the method according to claim 1 and the one according to D10.

- 12.4 It is, contrary to a further assessment of the respondent, also not necessary that a part molded by the method as disclosed in D10 needs to have a deep blind hole, as it is the case for the chisel handle referred to in this document.

The Board considers in this respect correct the statement of the respondent that the primary function of this blind hole is to accommodate the tool for which the handle is ultimately intended. Thus the chisel handle according to D10 needs to have this deep blind hole to enable later insertion of the chisel's shaft. As such it is a feature specific to the part concerned.

If the different part to be molded does not need, for its purpose, such a deep blind hole, the person skilled in the art will eliminate it altogether or reduce it in size. The first is no option because according to D10 the tooling core forming the blind hole serves the important function of connecting to the star wheel (cf. point 6.2.2), enabling transfer of a previously molded portion from one molding cavity to the next. The skilled person would therefore decide to reduce the tooling core in size while maintaining this transfer function, just as is done according to dependent claim 4 of the patent in suit, by means of the engagement member (see also figures 5-7 and column 3, lines 39-43).

12.5 The respondent argued in this respect also that the relatively long tooling core was indispensable for the cooling of the product formed with the method of D10, as the tooling core was subjected to cooling (cf. D10, page 310, last paragraph). The skilled person was thus prevented from reducing the size of the tooling core.

The Board, however, establishes that according to D10 cooling is, independently of the tooling core, enhanced by ribs on the molded outer portion (page 310, first paragraph). The Board concurs in this connection with the appellant that the person skilled in the art understands the reference to the ribs with respect to cooling in a more general sense as indicating that cooling can be provided via the outer surface of a previously molded portion of the chisel handle. Reference to the ribs in this context thus implies: the larger the outer surface (e.g. due to the provision of ribs), the better the cooling.

The skilled person is thus directly presented with a solution to this problem of cooling, if it exists as argued by the respondent: enlarge the outer surface.

In any case, since no deep blind hole will be formed by the engagement member of the preferred embodiment discussed above, it is clear that cooling via a part of this nature is of less impact as suggested by the respondent.

The Board in this connection further holds the argument of the appellant as being convincing that, for the outer portion molded around the inner core the cooling via a tooling core or an engagement member becomes, as

compared to cooling via its outer surface, even less important due to the increased distance to the tooling core/engagement member.

12.6 Since, as indicated above, D10 discloses all means necessary to enable molding of a part which does not need a deep blind hole such as a shaving razor handle it is, as argued by the appellant, apparent that firstly nothing speaks against use of the method according to D10 for such a handle and secondly the skilled person finds sufficient information in D10 when the method is to be adapted appropriately to the shaving razor handle.

13. *Claims 1 according to the auxiliary requests*

13.1 The above result applies equally with respect to claim 1 according to **auxiliary request 1** since these claims are identical.

13.2 As can be derived from the following the above considerations given with respect to claim 1 according to the main request, which concern the definition of the person skilled in the art, the technical field to be considered and the question of whether the person skilled in the art would take document D10 into account, apply correspondingly with respect to the subject-matters of the claims 1 of the remaining auxiliary requests.

13.3 The claims 1 according to **auxiliary requests 2 and 3** are identical and differ from claim 1 according to the main request in that features (c) - (e) read as follows

(here as in the following the amendments are indicated in bold):

- (c) molding an inner core of a first plastic at opposed first mold cavities, **said inner core comprising an elongated inner part**
- (d) molding an **elongated** outer portion of a second plastic around said inner core at opposed second mold cavities, and
- (e) molding at least one elastomeric grip portion on said **elongated** outer portion at opposed third mold cavities.

According to the respondent these amendments are intended to further define the specific shape of parts constituting the shaving razor handle when molded during the first and second molding steps, which would not be obvious to the skilled person.

The Board, however, considers that the adaption of the method known from D10 as discussed in point 11 above, to enable molding of a different small part, such as a shaving razor handle, requires that the mold cavities are adapted to the shape and size of the part to be molded. Consequently, if the product designer has decided on an elongated inner part for the inner core and an elongated outer portion molded thereon, the skilled person as considered in the present case will routinely, within his regular design practice, adapt the mold cavities accordingly. As the patent in suit does not disclose any particular technical function for these features, nor any problem particularly solved by

them, they can only be seen as normal design options or as inherent part of a shaving razor handle for which no further, in particular no inventive, considerations need to be made.

13.4 The claims 1 according to **auxiliary requests 2.1 and 3.1** are identical and differ from claims 1 according to auxiliary requests 2 and 3, in that after feature (e) the following feature has been added:

(f) so that the outer surface of the shaving razor handle is formed by the elongated outer portion and the elastomeric grip portion.

For the same reasons as given above with respect to the subject-matter of claims 1 according to auxiliary requests 2 and 3 feature (f) is yet another design choice of the product designer which the skilled person considered in the present case will simply have to provide for by an appropriate design of the mold cavities used in the method of D10, which, however, for the same reasons as given above, does not require inventive skills.

13.5 Claim 1 according to **auxiliary request 4** has, as compared to claim 1 according to the main request, amended features (c) and (d). In addition to feature (c) of claim 1 as granted the molding of an inner core is by injecting the first plastic through a gate into the first mould cavities, the molded inner core including a first end, a concave surface at the opposite end, and a central portion therebetween, the gate being adjacent the concave surface. In addition to feature (d) of claim 1 as granted, for the molding of an outer portion

the first end of the molded inner core is thinner than the end of the outer portion molded around the first end of the inner core, and the central portion of the molded inner core is thinner than a central portion of the outer portion molded around the central portion of the inner core.

The added features thus further define on the one hand, yet again, the specific shape of the part to be molded and on the other hand how the molding is performed.

As concerns the specific shape of the part to be molded the same considerations apply as for auxiliary requests 2 and 3, see point 13.3 above.

This applies correspondingly concerning the features related to the provision and the position of a gate for the injection of the first plastic. It is evident that such a gate has to be provided and as a consequence its position needs to be chosen. The skilled person considered in the present case, i.e. one skilled in molding small plastic parts will routinely do this within the framework of his regular design practice, considering e.g. how the injected plastic flows and how it needs to be distributed within a given mold cavity.

That such design choices, like many others not even defined in claim 1, have routinely to be made by the person skilled in the art when designing the required mold cavities becomes evident considering the fact that, within this claim, a gate is only defined with respect to the first mold cavities leaving it open to the skilled person to provide gates for the second and

third mold cavities using his common technical knowledge.

Finally, no specific effect has been demonstrated for the features added to claim 1.

Thus the subject-matter of claim 1 according to auxiliary request 4 does not involve an inventive step.

13.6 The claims 1 according to **auxiliary requests 6 and 7** are identical and differ from claim 1 according to the main request in that features (c) and (d) have been amended in that the inner core is molded such that it has a through hole and that the second plastic is injected into the through hole, directing it to the underside of the inner core.

The subject-matters of these claims 1 thus differ from the one according to claim 1 as granted in that the manner in which molding is performed during the first and second step is further defined.

As discussed during the oral proceedings it is evident that after the inner core has been molded in the first molding step and after it has been transferred into the second mold cavity, this mold cavity has to be filled as complete as possible when injecting the second plastic.

Again, how this can be achieved depends on the design of the product in question. If the surrounding second plastic is thin the flow around the inner core in the second mold cavity is seriously impaired. If on the other hand sufficient space around the inner core is

available no modification of the latter is necessary and plastic is injected through a gate into the cavity and will flow easily around the inner core.

For the first situation, as defined by the claims 1 concerned, the inner core is provided with a through hole through which the second plastic injected into the cavity on one side of the inner core can more easily reach the other side of the inner core.

The appropriate approach will be adopted depending on circumstances (such circumstances being neither defined in these claims 1 nor referred to in the patent in suit), both being within the means of the skilled person as considered in the present case, i.e. an expert in the technology of molding small plastic parts (cf. point 7.4 above).

In adapting the method according to D10 with respect to the specific part to be molded, that skilled person has to make various design choices, concerning e.g. the number and location of gates and determining which one of the two approaches referred to above is to be followed for the particular situation.

For completeness sake it is also referred to document D8 according to which a part (handle member 12), corresponding to the inner core of the patent in suit, is provided with holes to enable plastic injected into the molding cavity on one side of the part to also reach the other side (cf. D8, Figures 7 and 9 and column 3, lines 54-67).

The additional features of these claims 1 thus cannot be considered as contributing to their subject-matter involving inventive step.

- 13.7 Claim 1 according to **auxiliary request 8** when compared to claim 1 according to the main request, has its features (c) and (d) supplemented with the following:

the first mold cavities comprise a frustoconical protrusion, molding is performed by injecting the first plastic through a gate adjacent the concave surface into the first mold cavities, the molded inner core includes a first end, a concave surface at the opposite end, a central portion therebetween (feature (c)), and

a through hole is provided by the frustoconical protrusion, and molding of an outer portion is done by injecting the second plastic through a tubular member at the end of a gate channel extending into the through hole of the inner core in order to direct the second plastic to the underside of the inner core, the first end of the molded inner core being thinner than the end of the outer portion molded around the first end of the inner core, and the central portion of the molded inner core being thinner than a central portion of the outer portion molded around the central portion of the inner core (feature (d)).

Compared to the subject-matter of claims 1 of auxiliary requests 6 and 7 the additional features of the subject-matter of present claim 1 relate on the one hand to the shape of the inner core and a dimensional relationship between the inner core and the outer portion and on the other hand to the molding method,

defining the shape of the first cavity in which a frustoconical protrusion is provided, and defining more specifically how the plastic is directed to the underside of the inner core during the molding of the outer portion.

In support of the latter group the respondent again referred to the advantages mentioned in the patent in suit, according to which by injecting the plastic in two steps the formation of parts is much quicker than it would be if the entire amount of plastic were injected in a single step. The faster cooling this produces can desirably provide for maintaining of a textured surface finish that might otherwise re-melt to a smooth surface by dissipation of heat from a thick part if molded in one step only (column 1, lines 48-58).

It has been unable, however, to indicate which of the features added to claim 1 specifically produce these advantages and at the same time go beyond the molding method according to D10, by which such advantages are already obtained by molding a part sequentially in various molding steps as indicated above (cf. point 6.2.2). The respondent was also unable to plausibly argue that the features added to claim 1 produced any other technical effects.

The Board thus considers the argument of the appellant as valid, in that the features in question concern aspects which have in any case to be considered when adapting the method according to D10 to the molding of shaving razor handles, but as such are arbitrary and without any particular effect, such that they cannot provide support for inventive step.

For the added features relating to the specific shape of the part to be molded and the manner in which the molding is performed the reasons given in points 13.3 and 13.6 apply.

14. For the above reasons none of the subject-matters of the claims 1 of any request can be considered as involving an inventive step (Article 56 EPC), with the result that the patent has to be revoked.
15. In view of the above a decision on whether the claims as amended comply with Articles 84 and 123(2) and (3) EPC was also not necessary.

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