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**Datasheet for the decision
of 31 October 2014**

Case Number: T 0425/11 - 3.2.07

Application Number: 01906691.9

Publication Number: 1251968

IPC: B05B13/06

Language of the proceedings: EN

Title of invention:

SPRAY NOZZLE WITH IMPROVED ASYMMETRICAL FLUID DISCHARGE
DISTRIBUTION

Patent Proprietor:

SPRAYING SYSTEMS CO.

Opponent:

Lechler GmbH

Headword:

Relevant legal provisions:

EPC Art. 84, 56
RPBA Art. 13(1)

Keyword:

Claims - clarity - main request (no)
Late-filed auxiliary request 5 amended -
request clearly allowable (no)
Inventive step - auxiliary request 10 (no)

Decisions cited:

G 0001/99

Catchword:



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Chambres de recours**

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Case Number: T 0425/11 - 3.2.07

D E C I S I O N
of Technical Board of Appeal 3.2.07
of 31 October 2014

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
14 December 2010 concerning maintenance of the
European Patent No. 1251968 in amended form.**

Composition of the Board:

Chairman H. Meinders
Members: G. Patton
E. Kossonakou

Summary of Facts and Submissions

- I. The appellant (opponent) lodged an appeal against the decision of the opposition division to maintain the European patent No. 1 251 968 in amended form, requesting that the decision under appeal be set aside and the patent be revoked.

The opposition was filed against the patent as a whole and was based on Article 100(a) EPC (lack of novelty and lack of inventive step).

- II. The respondent (patent proprietor) replied to the appeal with its letter dated 31 August 2011 requesting to dismiss the appeal or, in case the decision is set aside, to maintain the patent on the basis of one of the auxiliary requests 1 to 4.

As subsidiarily requested by both parties, oral proceedings were arranged. In the annex to the summons for oral proceedings, the Board provided the parties with its preliminary non-binding opinion that the respondent's requests were regarded as not fulfilling the requirements of Articles 84, 83, 123(2), 54(1) and/or 56 EPC.

In reaction the respondent filed with its letter dated 30 September 2014 additional auxiliary requests 5 to 10.

- III. Oral proceedings took place on 31 October 2014 during which the following, *inter alia*, was discussed:

Claims 1 and 10 of the main request were discussed in the light of the requirements of Article 84 EPC in respect of "the plane of the [second/first] opening

extends...", the Chairman having indicated that the clarity issue arising from the inserted term appeared to be pervading also the corresponding claims of auxiliary requests 1 to 9.

After the Board had announced their conclusion that claims 1 and 10 of the main request did not appear to be fulfilling the requirements of Article 84 EPC in respect of this feature, the issue of the angles λ and δ being defined as "acute" in claims 1 and 10 of auxiliary request 5 was also discussed in respect of the requirements of Article 84 EPC. Following the announcement of the Board's conclusion that the inclusion of this characterisation would satisfy the requirements of Articles 83, 84 and 123(2) EPC, a break was allowed for the respondent to consider possible amendments to claims 1 and 10.

Auxiliary request 5 amended was filed in replacement of auxiliary request 5, which was withdrawn. This request was found not admissible in accordance with Article 13(1) RPBA as the amendments were not found to overcome the aforementioned objection of lack of clarity with respect to the planes of the openings.

Auxiliary request 10 was then discussed, first in light of the prohibition of *reformatio in peius* and the exceptions thereto as established in decision G 1/99 of the Enlarged Board of Appeal, and then in respect of the requirements of Article 56 EPC in the light of the teachings of document D10 and common general knowledge or combined with the teachings of documents D7 or D9.

IV. At the end of the oral proceedings the appellant reiterated the request that the decision under appeal

be set aside and the European patent No. 1 251 968 be revoked.

- V. The respondent requested that the decision under appeal be upheld (main request). Subsidiarily, that the patent be maintained in accordance with one of auxiliary request 5 amended, filed during the oral proceedings, or auxiliary request 10, filed with the submissions dated 30 September 2014. Auxiliary requests 1 to 9 were withdrawn.
- VI. The present decision was announced at the end of the oral proceedings.
- VII. The wording of claim 1 of the **main request** reads as follows (amendments as compared to the independent claim 1 of the patent as granted are in bold with deletions in strike-through; emphasis added by the Board):

"A spray nozzle (10) for producing an asymmetrically distributed fluid discharge pattern (24) wherein the location of the maximum fluid discharge is offset from the center of the fluid discharge pattern, the spray nozzle (10) comprising:
a body portion having an internal fluid passageway which terminates in a substantially hemispherical dome shaped end wall (42), the fluid passageway having a longitudinal axis (48), and
a discharge orifice (36) provided in the end wall (42), said discharge orifice (36) being formed by two superimposed openings including a first relatively rounder opening and a second relatively more elongated opening which extends beyond the perimeter of the first opening ~~characterised by~~ said first and second openings extending at different angles relative to the

longitudinal axis (48) of the fluid passageway such that the fluid discharge pattern thereby produced by the discharge orifice (36) has a continuous non-linear taper in the amount of fluid discharged from the location of maximum discharge to at least a point of minimum flow at one end of the discharge pattern **characterized in that the plane of said second opening extends at an anticlockwise angle λ relative to a plane extending perpendicular to the longitudinal axis and the plane of the first opening extends in the same direction at an anticlockwise angle δ relative to the perpendicular plane such that the angle λ of the second opening is larger than the angle δ of the first opening.**"

The wording of claim 1 of the **auxiliary request 5 amended** reads as follows (amendments as compared to the independent claim 1 of the main request are in bold with deletions in strike-through; emphasis added by the Board):

"A spray nozzle (10) for producing an asymmetrically distributed fluid discharge pattern (24) wherein the location of the maximum fluid discharge is offset from the center of the fluid discharge pattern, the spray nozzle (10) comprising:
a body portion having an internal fluid passageway which terminates in a substantially hemispherical dome shaped end wall (42), the fluid passageway having a longitudinal axis (48), and
a discharge orifice (36) provided in the end wall (42), said discharge orifice (36) being formed by two superimposed openings including a first relatively rounder opening and a second relatively more elongated opening which extends beyond the perimeter of the first opening said first and second openings extending at

different angles relative to the longitudinal axis (48) of the fluid passageway such that the fluid discharge pattern thereby produced by the discharge orifice (36) has a continuous non-linear taper in the amount of fluid discharged from the location of maximum discharge to at least a point of minimum flow at one end of the discharge pattern characterized in that the ~~plane of said~~ second opening **extends-is formed in a plane** at an **acute** anticlockwise angle λ relative to a plane extending perpendicular to the longitudinal axis and ~~the plane of~~ the first opening **extends-is formed in a plane** in the same direction at an **acute** anticlockwise angle δ relative to the perpendicular plane such that the angle λ of the second opening is larger than the angle δ of the first opening."

The wording of claim 1 of the **auxiliary request 10** reads as follows (amendments as compared to the independent claim 11 of the patent as granted are in bold with deletions in strike-through; emphasis added by the Board):

"A process for producing a spray nozzle (10) which has an asymmetrically distributed fluid discharge pattern (24) wherein the location of the maximum fluid discharge is offset from the center of the fluid discharge pattern (24) comprising the steps:
forming a nozzle blank (38) with an internal fluid flow passageway having a longitudinal axis (48) and which terminates in a substantially hemispherical dome shaped end wall,
forming a discharge orifice in the end wall (42) of the nozzle by forming in overlying relation a first relatively rounder opening and a second relatively more elongated opening ~~characterised by forming~~ said first

opening **being formed by a cutting operation centred on and performed** in a first plane relative to the longitudinal axis of said fluid flow passageway and ~~forming~~ said second opening **being formed by a cutting operation centred on and performed** in a second plane at an angle relative to the first plane such that the fluid discharge pattern (24) thereby produced by the discharge orifice (36) has a continuous non-linear taper in the amount of fluid discharged from the location of maximum discharge to at least a point of minimum flow at one end of the discharge pattern (24), **characterized in that a plane of the cutting operation of said second opening extends at an acute anticlockwise angle λ relative to a plane extending perpendicular to the longitudinal axis and a plane of the cutting operation of the first opening extends in the same direction at an acute anticlockwise angle δ relative to the perpendicular plane such that the angle λ of the cutting operation of the second opening is larger than the angle δ of cutting operation of the first opening."**

VIII. The following documents of the opposition proceedings are relevant for the present decision:

D7: US-A-3 697 313
D9: US-A-2 971 250
D10: US-A-3 737 108

D7 and D10 are cited in the contested patent, paragraph [0007].

IX. The appellant argued essentially as follows:

Main request

Claim 1 is unclear since the features: "the plane of the [first/second] opening extends" imply that said openings lie in a plane, contradictory to what actually happens when cutting across a dome with shaped cutting tools as disclosed in the contested patent.

Auxiliary request 5 amended

The amendments performed in claim 1 stating that the openings are "formed in a plane" do not allow, at first sight, to overcome the outstanding objection of lack of clarity. Therefore the Board, exercising its discretionary power, should not admit the late-filed auxiliary request 5 amended in the proceedings.

Auxiliary request 10

The only distinguishing features of claim 1 of auxiliary request 10 over the closest prior art document D10 are those specified in the characterising portion, namely that a plane of the cutting operation of said second opening extends at an acute anticlockwise angle λ relative to a plane extending perpendicular to the longitudinal axis and a plane of the cutting operation of the first opening extends in the same direction at an acute anticlockwise angle δ relative to the perpendicular plane such that the angle λ of the cutting operation of the second opening is larger than the angle δ of cutting operation of the first opening.

Since the technical effects associated with these features are the same as in D10, the problem to be solved can only be to provide an alternative spray nozzle. The skilled person using his common general knowledge will, in view of the form of the container to be coated, adapt the fluid discharge pattern to be produced accordingly and, hence, with simple trial and error arrive at the claimed subject-matter in an obvious manner.

X. The respondent argued essentially as follows:

Main request

The skilled person using the description of the contested patent, a mind willing to understand and his common general knowledge will realise that the features: "the plane of the [first/second] opening extends" relate to the planes of the cutting operations. Thus, claim 1 of the main request is clear.

Auxiliary request 5 amended

The amendments introduced to claim 1 clarify that the planes under discussion are the planes of the respective cutting operations so that claim 1 of auxiliary request 5 amended is clear.

Auxiliary request 10

Neither the features of the characterising portion of claim 1 of auxiliary request 10 nor the fact that the discharge orifice has a continuous non-linear taper in the amount of fluid discharged from the location of maximum discharge to at least a point of minimum flow at one end of the discharge pattern are disclosed in

D10. These distinguishing features are associated with the problem to be solved of providing an improved fluid discharge pattern not obtained in the prior art. Since the skilled person not only has no pointer in the cited prior art toward the claimed solution, but would even be working against an established prejudice, inventive step has to be acknowledged.

Reasons for the Decision

1. *Main request*

1.1 In the annex to the summons for oral proceedings (see point 5.1.2) the Board raised an objection of lack of clarity against claim 1 of the main request in view of the following features:

- "the plane of the first opening extends"; and
- "the plane of said second opening extends".

These features, introduced in claim 1 during the opposition proceedings, imply that the first and second openings now lie in a plane (which is by definition flat).

However, since the cutting of the opening of the spray nozzle according to the invention is performed with a V-shaped or a curved cutting tool (see figures 8, 10, 11 and 13 and independent process claim 11 of the application as originally filed), i.e. not necessarily a tool which is straight over the width of the opening, the openings cannot be contained in a (single) plane and, *a fortiori*, the plane of each of the openings cannot extend "at an angle" (be it δ or λ). The contour of an opening resulting from a V-shaped or a curved

- cutting tool, as it is done in the contested patent, is inevitably three-dimensional, which is contradictory to the above features of claim 1 (Article 84 EPC).
- 1.2 This was illustrated at the oral proceedings before the Board by a tennis ball brought by the appellant. The tennis ball representing a dome shape had been cut across as if by a V-shaped cutting tool. The contours of the corresponding opening had indeed a complex three-dimensional shape, which could not be comprised in a single plane.
- 1.3 The respondent admitted that the openings as defined in claim 1 are not comprised in a plane. It argued that the skilled person will, however, interpret the claim in a logical sense. He will use the description of the contested patent to understand the meaning of the planes under discussion as corresponding to a direction, more particularly the moving direction of the tool. Using his common general knowledge the skilled reader willing to understand the invention will then realise what falls within the claim and what not. The respondent, citing D7, column 5, lines 30-44, further alleged that the prior art also used the same terminology.
- 1.4 The Board could not share the respondent's view for the reasons also put forward by the appellant during the oral proceedings.

Should both first and second openings be respectively in a plane, as claimed, then the dome would have to be completely cut away. In that case there would be a contradiction within the claim since the second opening could not be more elongated than the first opening as claimed. As a matter of fact, the cutting of a

hemispherical dome can only lead to an opening in circular form, whatever the angle followed by the cutting tool during the cutting operation.

In fact, as already discussed above, the openings according to the contested patent are obtained by shaped cutting tools (see figures 8, 10, 11 and 13), especially the second opening which is obtained by a forming tool with a cutting edge tapering to a sharp point (see independent process claim 11 of the application as originally filed and figure 13). Neither the first nor the second opening can therefore be in a plane, contrary to claim 1. The three-dimensional nature of the contours of the openings is further confirmed by the fact that, according to the contested patent, paragraph [0022], they can be obtained by "plunging" a cutting tool, i.e. not necessarily by cutting across the dome, so that even the moving direction of the tool during the cutting operation cannot help in defining a plane according to claim 1.

With respect to the prior art, it was pointed out during the oral proceedings that D7 does not disclose a plane for the opening but rather that the movement of the cutting tools is within a plane.

2. *Auxiliary request 5 amended*

- 2.1 In an attempt to overcome the lack of clarity objection, the respondent filed during the oral proceedings before the Board an amended auxiliary request 5 replacing the former auxiliary request 5.

Claim 1 of auxiliary request 5 amended comprises the feature that the first and second openings are "formed

- in a plane", to replace the feature that the plane of the first and second opening "extends".
- 2.2 In view of the late filing of auxiliary request 5 amended, its admission in the proceedings is subject to the discretionary power of the Board as defined in Article 13(1) RPBA.
- 2.3 The respondent argued that the amendments clarify that the openings are in the plane of the cutting operation. The skilled person will have no difficulty to understand, especially in view of the description of the contested patent, paragraphs [0023] and [0027], and claim 11 of the application as originally filed, that the tools are moving during the cutting operations along planes which form the openings, as now defined in claim 1.
- 2.4 The Board could not share the respondent's view for the reason put forward by the appellant, namely that the wording "formed in a plane" still implies that the openings lie in a single plane, i.e. are two-dimensional, which is actually not the case as discussed under point 1 above (Article 84 EPC).
- 2.5 As a consequence, auxiliary request 5 amended was not admitted in the proceedings since it did not overcome *prima facie* the outstanding objection of lack of clarity (Article 13(1) RPBA).
3. *Auxiliary request 10*
- 3.1 During the oral proceedings it was concluded that none of the objections raised pursuant to Articles 83, 84 and 123(2) EPC in respect of the previously discussed requests would hold against auxiliary request 10. In

particular, the further qualification of the angles to be "acute" is derivable from figures 7 and 12, showing also the cutting direction.

- 3.2 It was also noted that, as a result of the deletion of the features: "the plane of the [first/second] opening extends" (see point 1.1 above), the scope of claim 1 of auxiliary request 10 would appear broader than that of the corresponding process claim 10 of the patent as maintained by the Opposition Division. As a matter of fact, the openings in claim 1 of auxiliary request 10 would not be required to be in a plane any longer, so that the amendments would seem to be contrary to the principle of prohibition of *reformatio in peius*.

However, these features had been introduced in claim 1 of the patent as granted during the opposition proceedings and considered allowable by the Opposition Division. As they were considered in appeal to contravene the requirements of Article 84 EPC (see point 1 above), the respondent replaced them in the process claim 10 by the planes of the cutting operations. The Board found that these amendments allowed the respondent to overcome the lack of clarity objections and further did not contravene the requirements of Article 123(3) EPC. This was not contested by the appellant.

In the light of the discussion at the oral proceedings, it further appeared that these were the only possible amendments for solving the clarity issue, so that they could be regarded as falling within the second type of admissible amendments as an exception to the prohibition of *reformatio in peius* as established in decision G 1/99 (OJ EPO 2001, 381). This was again not contested by the appellant.

3.3 Novelty of the subject-matter of claim 1 of auxiliary request 10 was also not contested by the appellant. It contested inventive step of the subject-matter of claim 1 in the light of the teaching of document D10 and the skilled person's common general knowledge.

3.4 The Board agreed with the parties to select D10 as the closest prior art for the subject-matter of claim 1 of auxiliary request 10 since it relates to the same technical field, namely spray nozzles for use in container coating operations, and aims at the same goal of producing an asymmetrical distribution of the fluid discharge (contested patent, [0001]; D10, column 3, lines 5-29).

3.5 Disclosure of D10

3.5.1 Document D10 (column 3, line 5 to column 7, line 17; column 8, line 19 to column 9, line 55; figures 1-8, 11-16) discloses a process for producing a spray nozzle which has an asymmetrically distributed fluid discharge pattern (H, L in figures 8 and 16) wherein the location of the maximum fluid discharge (point 10 in figures 8 and 16) is offset from the center of the fluid discharge pattern comprising the steps:

- forming a nozzle blank (B) with an internal fluid flow passageway having a longitudinal axis (a-a) and which terminates in a substantially hemispherical dome shaped end wall (D),
- forming a discharge orifice (O) in the end wall (D) of the nozzle by forming in overlying relation a first relatively rounder opening (O'') and a second relatively more elongated opening (O'), said first opening (O'') being formed by a cutting operation centred on and performed in a first plane (61) relative to the

longitudinal axis (a-a) of said fluid flow passageway and said second opening (O') being formed by a cutting operation centred on and performed in a second plane (37) at an angle relative to the first plane such that the fluid discharge pattern thereby produced by the discharge orifice (O) has a continuous non-linear taper in the amount of fluid discharged from the location of maximum discharge (point 10) to at least a point of minimum flow at one end of the discharge pattern (see figures 8 and 16).

In D10, the plane (37) of the cutting operation of said second opening (O') extends at an anticlockwise angle λ relative to a plane (36) extending perpendicular to the longitudinal axis (a-a) (see figures 1a and 2) and the plane (61) of the cutting operation of the first opening (O'') extends in the same direction at an anticlockwise angle δ relative to the perpendicular plane (36) (see figures 1b and 2a) such that the angle λ of the cutting operation of the second opening is larger than the angle δ of the cutting operation of the first opening.

As admitted and argued by the parties, the disclosed spray nozzle shown in figures 1, 2, 2a comprises the following anticlockwise angles:

angle $\lambda = 7,5^\circ$ (figure 2);

angle $\delta = 150^\circ$ (figure 2a)

so that: $\delta > \lambda$, contrary to claim 1.

Viewing the very same disclosed spray nozzle from the other side of the sheet of paper on which said figures are printed, which is a symmetry plane (i.e. looking through the paper held against the light), leads to the following anticlockwise angles:

angle $\lambda' = 172,5^\circ$ (figure 2);

angle $\delta' = 30^\circ$ (figure 2a)

so that: $\lambda' > \delta'$, fulfilling the conditions set in claim 1. The Board considers that the disclosure in these figures, as they are, leads to the skilled person also being informed about the above mentioned "rear-view" of the nozzle, since the latter can be observed from both sides.

However, in the thus disclosed spray nozzle, at least one of the angles is obtuse.

The same applies to the embodiments shown in figures 11, 12 and 13 for which anticlockwise e.g. in figure 12:

angle $\lambda = 0^\circ$;

angle $\delta = 16,5^\circ$

so that: $\delta > \lambda$, contrary to claim 1.

Viewing the very same disclosed spray nozzle of figure 12 from the other side of the sheet of paper, which is a symmetry plane, leads to the following anticlockwise angles:

angle $\lambda' = 180^\circ$; and

angle $\delta' = 164,5^\circ$

in other words: $\lambda' > \delta'$, fulfilling the conditions set in claim 1.

However, in the thus disclosed spray nozzle, both angles are obtuse.

Consequently, D10 does not disclose that both angles are **acute** angles when the relation $\lambda > \delta$ is satisfied, so that the subject-matter of claim 1 is novel over D10 (Article 54(1) EPC).

3.5.2 The respondent contested that the fluid discharge pattern in D10 has a **non-linear** taper in the amount of fluid discharged from the location of maximum discharge to at least a point of minimum flow at one end of the discharge pattern.

It considered that the disclosure of D10 as a whole should be taken into account. In particular, figures 8 and 16 of D10 should **not be interpreted in isolation** but in the light of the description. There, column 4, lines 37-46, makes explicitly clear that the fluid discharge pattern shown in figure 8 tapers "substantially linearly". The term "substantially" is used in order to include the tolerance of $\pm 5\%$ in variation at producing a linear distribution as described in column 4, lines 41-42. Since the aim in D10 is unambiguously to produce a linear fluid discharge pattern, the skilled reader will thus immediately understand that the fluid discharge pattern of the nozzles in D10, even those shown in figures 8 and 16, is linear. Consequently, the feature of claim 1 related to the non-linearity of the fluid discharge pattern should be considered as a distinguishing feature over D10.

3.5.3 The Board could not share the respondent's view for the reasons also put forward by the appellant during the oral proceedings.

Firstly, the fluid discharge patterns shown in figures 8 and 16 of D10 are clearly non-linear on both sides of the maximum discharge point. Secondly, the mentioned passage of D10, column 4, lines 37-51, makes a distinction between the "linear" fluid discharge pattern in figure 10 according to the prior art of D10 and the "**substantially** linear" fluid discharge pattern according to the invention of D10 as appearing in figures 8 and 16. Should the author of D10 have regarded the distribution according to the invention "linear", he would have used the same terminology as for its prior art, namely "linear". Since he chose to

use the expression "substantially linear", he clearly wished to distinguish the fluid discharge pattern of his invention from that of the cited prior art, i.e. to render it for the skilled reader directly and unambiguously **non-linear** on both sides of the maximum discharge point.

It is further emphasized that the expression "**considerable** non-linear taper" used by the respondent in its written submissions in order to describe the fluid discharge pattern according to the contested patent is not in claim 1. In any case, this expression is vague and has a relative meaning (see also impugned decision, point 8.4.4). The same applies to the suggestion that the invention clearly achieves a concave curve in the fluid discharge pattern, which is not claimed either.

3.5.4 In D10 the second opening is obtained first (first cut of figures 1a and 2) and the first opening thereafter (second cut of figures 1b and 2a). This cannot lead, however, to a distinguishing feature of the claimed process over D10, since the sequence of steps - which of the openings is performed first - is not specified in claim 1 of auxiliary request 10. This appears clearly from claims 10 and 11 of auxiliary request 10 (respectively claims 21 and 22 of the patent as granted).

3.6 Distinguishing features

As a result of the above, the only distinguishing features of claim 1 of auxiliary request 10 over D10 are those of the characterising portion:

a plane of the cutting operation of said second opening extends at an **acute** anticlockwise angle λ relative to a plane extending perpendicular to the longitudinal axis and a plane of the cutting operation of the first opening extends in the same direction at an **acute** anticlockwise angle δ relative to the perpendicular plane such that the angle λ of the cutting operation of the second opening is larger than the angle δ of cutting operation of the first opening.

3.7 Technical effect

3.7.1 The technical effect of the above distinguishing features is to enable the application of a thin, even coat on all of the interior surfaces of a container (contested patent, [0006]; [0008]; column 5, line 53 to column 6, line 5).

3.8 Problem to be solved

3.8.1 This technical effect is, however, as discussed during the oral proceedings, the same as that achieved by the spray nozzle of D10 (column 3, lines 5-29; column 4, lines 25-36; figures 8 and 16; see also the impugned decision, points 8.4.3 and 8.4.4; appellant's letter dated 16 December 2011, paragraph bridging pages 2 and 3).

Consequently, the problem to be solved by the distinguishing features can only be regarded as to provide an **alternative** spray nozzle to that of D10 for producing the same result, namely a thin, even coat on the interior surfaces of containers.

3.8.2 The respondent argued that the problem to be solved should be regarded as to provide a spray nozzle

allowing to produce an **improved** fluid discharge pattern as claimed, i.e. an asymmetric, continuous and non-linear one (contested patent, [0018]).

The Board could not share this view since, as discussed above, the fluid discharge pattern of D10 is also asymmetric, continuous and non-linear.

3.9 Obviousness

3.9.1 The Board concurs with the appellant that the skilled person knows that a rounder/wider opening will provide more fluid than a more elongated/narrower opening at a given location. Consequently, depending on the form of the internal surface of the container to be coated, the skilled person will immediately consider to vary the relative orientations of the two superposed openings with respect to each other, in order to obtain the desired amount of coating where it is needed, i.e. a fluid discharge pattern adapted to said internal surface. D10 itself teaches for that purpose to change the inclination of **any cut** through the dome, including to tip the bottom line (60) of the cut, so as to diminish the size effect of O" in relation to O' in the orifice O (column 7, lines 11-17). Therefore, after a process of simple trial and error for producing the desired fluid discharge pattern, the skilled person will inevitably arrive at the claimed solution of acute angles δ and λ with λ larger than δ . As a consequence, the subject-matter of claim 1 of auxiliary request 10 does not involve an inventive step (Article 56 EPC).

3.9.2 The respondent argued that there is no pointer in the cited prior art toward this solution, so that inventive step has to be acknowledged. Further, the claimed solution is even contrary to an established prejudice

in the technical field as illustrated by D7, D10 and D9, of having at least one of the angles obtuse when λ is larger than δ .

- 3.9.3 Contrary to the respondent's view, the Board considers that there is no need in the present case for a pointer to the solution in the available prior art since the solution resides in the skilled person merely applying his common general knowledge when faced with the less ambitious objective technical problem of finding an alternative nozzle as set out under point 3.8.1 above.

Further, for the patent documents D7, D9 and D10 to be evidence of a technical prejudice against having both angles acute in the same anticlockwise direction, it would have required them to be more explicit in that respect. To the Board, they are supporting evidence of the skilled person's trial-and-error approach to the design of spray nozzles.

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

Decision electronically authenticated