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**Datasheet for the decision
of 24 November 2023**

Case Number: T 2038/20 - 3.2.03

Application Number: 10194871.9

Publication Number: 2336687

IPC: F25D17/06, F25D23/06, F25D23/08

Language of the proceedings: EN

Title of invention:

Refrigerating appliance of the no-frost type, in particular for household use, and method for making such an appliance

Patent Proprietor:

Whirlpool EMEA S.p.A.

Opponent:

BSH Hausgeräte GmbH

Relevant legal provisions:

EPC Art. 54, 56, 100(c)
RPBA 2020 Art. 12(4), 12(6), 13(2)

Keyword:

Novelty - main request (yes)

Inventive step - non-obvious alternative - problem and solution approach - non-obvious combination of known features - main request (yes)

Grounds for opposition - subject-matter extends beyond content of earlier application (no)

Amendment to case - objection

Late-filed objection - should have been submitted in first-instance proceedings (yes) - circumstances of appeal case justify admittance (no) - admitted (no)

Amendment after summons - exceptional circumstances (no)

Claim interpretation - for Board to interpret the claim - not relevant whether skilled person has knowledge of patent language



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Case Number: T 2038/20 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 24 November 2023

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 12 November
2020 rejecting the opposition filed against
European patent No. 2336687 pursuant to Article
101(2) EPC.**

Composition of the Board:

Chairman C. Herberhold
Members: R. Baltanás y Jorge
F. Bostedt

Summary of Facts and Submissions

- I. European patent No. 2 336 687 B1 relates to a *"Refrigerating appliance of the no-frost type, in particular for household use, and method for making such an appliance"*.
- II. An opposition was filed against the patent on the basis of Articles 100(b), (c) and 100(a) EPC in conjunction with Articles 54 and 56 EPC.
- III. This appeal is against the opposition division's decision rejecting the opposition.

Oral proceedings were held on 24 November 2023.

IV. Requests

The opponent (appellant) requested that the decision under appeal be set aside and that the patent be revoked.

The patent proprietor (respondent) requested that the appeal be dismissed and, as a subsidiary measure, that the patent be maintained as amended on the basis of one of auxiliary requests 1 to 7 filed with the reply to the statement setting out the grounds of appeal. The respondent also requested that the inventive step objection starting from D1 not be admitted into the appeal proceedings.

- V. Claim 1 as granted (main request), including the numbering of its features based on that adopted by the parties, reads as follows (amendments compared with originally filed claim 1 are marked in bold):

- 1.1 A refrigerating appliance (1) of the no-frost type, in particular for household use, comprising:
 - at least one internal compartment (10, 20) for preserving foodstuffs, defined by a thermoformed cell (41), in particular said internal compartment (10, 20) comprising a freezer compartment (20);
- 1.2 - a refrigerating chamber (30) comprising an evaporator (31) adapted to cool the air
- 1.3 and a fan (32) for circulating the air inside said at least one internal compartment (10, 20);
- 1.4 - a duct (40) for distributing the cooling air coming from the fan (32) into said refrigerating appliance (1),
- 1.5 ~~characterised in that~~ said duct (40) **is being** obtained when thermoforming said thermoformed cell (41),
- 1.6 in particular by shaping said thermoformed cell (41) in a manner such that it includes a projection extending towards a back wall (2) of the refrigerating appliance (1)
- 1.7 **and said refrigerating appliance (1) comprising at least one sheet (42) which can be associated with the thermoformed cell (41) for closing the duct (40),**
- 1.8 **said sheet (42) comprising a pair of substantially parallel appendices (43) extending within the duct (40) in the same direction as that of the cooling air flow**
- 1.9 **and acting as a reference element for properly positioning the sheet (42) relative to the thermoformed cell (41),**

- 1.10 **characterised in that it comprises sealing elements (45),**
- 1.11 **in particular made of spongy material,**
- 1.12 **positioned in the duct (40)**
- 1.13 **and arranged between the thermoformed cell (41) and said appendices (43) of the sheet (42)**
- 1.14 **to prevent any leakage of cooling air.**

Claim 8 as granted, including the numbering of its features based on that adopted by the parties, reads as follows (amendments compared with originally filed claim 11 are marked in bold):

- 8.1 *A method for making a refrigerating appliance (1) of the no-frost type, in particular for household use, comprising:
 - at least one internal compartment (10, 20) for preserving foodstuffs, defined by a thermoformed cell (41), in particular said internal compartment (10, 20) comprising a freezer compartment (20);
 - a refrigerating chamber (30) comprising an evaporator (31) adapted to cool the air and a fan (32) for circulating the air inside said at least one internal compartment (10, 20);
 - a duct (40) for distributing the cooling air coming from the fan (32) into said refrigerating appliance (1),*
- 8.2 **~~characterised in that~~** *said method comprising* **esing** *a step of thermoforming said thermoformed cell (41) in a manner such that the latter includes a projection extending towards a back wall (2) of the refrigerating appliance (1) for the purpose of obtaining said duct (40),*
- 8.3 **said method comprising the following steps:**

a) inserting an insulating foam (3) made of plastic material, in particular polyurethane, in the space between said back wall (2) and said thermoformed cell (41);

8.4 b) associating a sheet (42) with the thermoformed cell (41) for closing the duct (40), by inserting a pair of appendices (43) into said duct (40), in particular said appendices (43) being obtained when moulding said sheet and being adapted to be used as reference elements for properly positioning the sheet (42) relative to the thermoformed cell (41),

8.5 characterised in that said step b) is preceded by the application of sealing elements (45) to the sheet (42),

8.6 said sealing elements (45) being positioned in the duct (40) and arranged between the thermoformed cell (41) and said appendices (43) of the sheet (42),

8.7 said sealing elements (45) being adapted to prevent any leakage of cooling air between the thermoformed cell (41) and the sheet (42).

VI. Originally filed claim 8 reads as follows:

A refrigerating appliance (1) according to claim 4, characterised by comprising sealing elements (45), in particular made of spongy material, arranged between the thermoformed cell (41) and the sheet (42) to prevent any leakage of cooling air.

VII. Prior art

The following documents have been cited, both in the statements setting out the grounds of appeal and during

the opposition proceedings, and are relevant to this decision:

D1: US 5,768,909 A

D7: DE 10 2005 021 609 A1

VIII. The appellant's arguments concerning the main request can be summarised as follows.

(a) Added subject-matter

Amended feature 1.10 extended the subject-matter in an unallowable manner since it defined a thermoformed cell comprising sealing means. This embodiment was not originally disclosed.

The word "it" in feature 1.10 had to refer to the last noun before this term, i.e. to the thermoformed cell mentioned at the end of feature 1.9. This was the logical interpretation for the skilled person from a syntactic point of view. The skilled person to be considered for interpreting the feature was a person skilled in the technical field, not a person skilled in patent language. Moreover, it was not uncommon in patent language to further define only a particular subunit of a claimed device in the characterising portion, as had been done in claim 1 of the originally filed application corresponding to this patent. Thus it was a reasonable interpretation that the characterising portion starting in feature 1.10 defined the subunit "thermoformed cell" of the claimed refrigerating appliance.

Moreover, another meaning of the wording "it comprises sealing elements" was that the sealing elements were mounted or provided on the thermoformed cell, not

necessarily that the thermoformed cell and the sealing elements formed a constructional unit. Sealing elements mounted on the thermoformed cell were suitable to be arranged between the thermoformed cell and the appendices of the sheet as defined in feature 1.13. This interpretation made technical sense and did not give rise to any contradiction or lack of clarity.

Consequently, the interpretation considered by the skilled person was that it was the thermoformed cell which is specified as comprising the sealing means, yet this extended beyond the original disclosure. This was not allowable, *inter alia* in view of legal certainty for third parties, even if there was an alternative originally disclosed interpretation of the feature.

It was the respondent who had replaced the wording "characterised by comprising" in originally filed claim 8 - from which feature 1.10 derived - with "characterised in that it comprises". The respondent could have chosen the wording "said refrigerating appliance comprising" as in feature 1.7 to point out that it was the claimed device that comprised the sealing means, but the respondent did not do so.

The subject-matter of claim 1 was thus extended in an unallowable manner.

(b) Novelty

The subject-matter of claim 1 was not novel over D1.

The feature "thermoformed cell" was implicitly disclosed for the skilled person when reading D1. The complex shape of the cell, i.e. of cabinet shell (9) in Figure 1 of D1, was one which was typically

manufactured by thermoforming. When looking at Figure 1, the skilled person deduced immediately that this cell had to be made of plastic material by thermoforming. In this context, injection moulding and deep drawing - which were the suitable technologies for manufacturing such a cell - both fell under the category "thermoforming" since heat had to be applied in both cases.

Moreover, the sealing elements (cushions (22) in Figure 3 of D1) were explicitly disclosed for preventing cold air leakage (column 4, lines 1 to 4). This meant that the whole pocket formed in the thermoformed cell - where the spacer damper (12) was housed - qualified as a duct for distributing the cooling air within the meaning of claim 1. More particularly, as was clear from the need to provide sealing cushions, the spacer damper (12) did not prevent air flowing from the flow passage (13) towards the rest of the space formed in the deformed cell (9), which was thus a duct as defined in claim 1. The duct of Figure 2a of the contested patent also comprised walls of the deformed thermoformed cell (41) which were not in contact with the cooling air due to the presence of the sealing means (45). Moreover, paragraph [0031] of the patent hinted at arranging further elements like valves in the duct space. Therefore, the presence of the spacer damper (12) - which was not even essential for the functioning of the device - in the pocket formed by the cell (9) in D1 did not make any structural difference with regard to the contested patent.

Finally, the spacer damper (12) was not necessary when air was to be distributed towards the freezer of D1 since its role was related to thermal insulation.

Document D7 also disclosed all the features of claim 1. Thermoforming the cell was not a difference since the disclosed deep-drawing manufacturing process of plastic material implied the use of heat. Sealing elements within the meaning of features 1.10, 1.12, 1.13 and 1.14 ("sealing elements [...] positioned in the duct and arranged between the thermoformed cell and said appendices of the sheet to prevent any leakage of cooling air") were disclosed in Figure 5 of D7 since the nubs ("Noppen" 20) provided inherent (labyrinth) sealing. Moreover, since no leakage of cooling air was mentioned in D7, the contact region between the appendices (16) and the thermoformed cell (2) provided the claimed sealing elements.

(c) Admittance of the objection starting from D1

D1 had been used since the beginning of the opposition proceedings to substantiate an objection of lack of novelty. The appellant had also consistently stated that thermoforming was at least obvious for the skilled person, the reasons being implicit from the arguments in relation to the novelty objection. The corresponding objection of lack of inventive step was *prima facie* relevant in view of this single difference and its obviousness. In this context, under Article 114(1) EPC the Board had an obligation to examine such *prima facie* relevant objections. With the Articles of the EPC prevailing over the RPBA, Articles 12 and 13 RPBA 2020 could not exempt the Board from said obligation.

It had not been possible to raise the objection regarding the obviousness of the thermoforming process starting from D1 during the oral proceedings before the opposition division since the division had considered that there were further distinguishing features. It was

only when reading the decision that the differentiating features became clear. The objection was therefore filed at the earliest possible opportunity in view of the contested decision. It was not appropriate to expect the appellant to prepare an objection against each feature that the respondent had considered not to be disclosed in D1.

Consequently, the objection starting from D1 had to be admitted into the appeal proceedings in view of the circumstances.

(d) Inventive step

Even if it were accepted that the subject-matter of claim 1 differed from D7 on account of the features related to the sealing elements (1.10 to 1.14), the subject-matter did not involve an inventive step.

The technical effect of the distinguishing features was that cooling air could not leak between the thermoformed cell and the appendices.

The objective technical problem was thus preventing leakage of cooling air.

Providing a sealing element between two parts - e.g. by means of a spongy material - was an obvious solution for the skilled person.

It was not necessary for the motivation to solve the objective technical problem to be present in the closest prior art in order to justify a lack of inventive step. This motivation was available in the teaching to be combined with the closest prior art, in this case in the common general knowledge. Avoiding

leakage of cooling air in a duct was trivial for the skilled person.

Furthermore, if it were held that the device of D7 did not have any problem of air leakage, the subject-matter of claim 1 would not be inventive since it did not solve any technical problem with regard to the closest prior art.

Starting from Figure 2 of D7, it was thus obvious for the skilled person to arrange sealing elements between the appendices (16) and the thermoformed cell (17) to solve the objective technical problem. Even if D7 did disclose clamping between these parts, such close fitting was provided only at a particular location rather than generally along the whole wall, and it would not pose a problem with regard to the arrangement of sealing elements. Furthermore, paragraph [0009] of D7 disclosed that the parts were produced with tolerances. These tolerances made it possible to use sealing elements in between. The sealing elements would even improve the fitting since they compensated for the existing tolerances. Flexibility of the appendices (16) also ensured that sealing elements could be arranged since the appendices would bend when coming up against the sealing elements. In any case, also providing an extra room that partly received the sealing elements on the wall of the adjacent parts was well within the routine capabilities of the skilled person.

The skilled person would also arrive at the invention starting from Figure 5 of D7 since the corner spaces below the side strips (21) were suitable to receive sealing elements. The skilled person knew that providing such sealing elements at a corner was a well-known solution (see e.g. cushions (22) of D1) and would

contemplate the need for sealing in view of the short appendices (16) and the punctiform nubs (20). The sealing elements at this corner would be in contact with cooling air as in the contested patent. The skilled person would not consider arranging sealing elements between the side strips (21) and the wall (23) of the thermoformed cell since this would imply that the surfaces were no longer flush as intended.

IX. The respondent's arguments concerning the main request can be summarised as follows.

(a) Added subject-matter

There was no reason to consider that the word "it" in feature 1.10 ("characterised in that it comprises sealing elements") referred to something other than the claimed refrigerating appliance. This was supported by the wording of claim 1 as a whole, which clearly defined different features of the claimed refrigerating appliance, feature 1.10 just being one more of them. This was the normal way of reading claim 1 from a syntactic point of view and there was no need to be an expert in patent language to reach this conclusion.

Furthermore, if the word "it" in feature 1.10 referred to the thermoformed cell, this would be in contradiction with feature 1.13 ("arranged between the thermoformed cell and said appendices of the sheet"). The sealing means could not be part of the structure of the thermoformed cell - which would be the case if the appellant's interpretation of feature 1.10 were adopted - and at the same time be arranged between the same thermoformed cell and the appendices of the sheet.

(b) Novelty

The feature of the cell being thermoformed was not even implicitly disclosed in D1. Figure 1 was schematic and did not disclose a structure which could only be produced by thermoforming. No complex shape lending itself in particular to being manufactured only by thermoforming could be identified in Figure 1, in particular since the damper cover (15) was disclosed as a separate piece from the cabinet (9). Furthermore, other techniques like injection moulding - which was different from thermoforming - were available to the skilled person for producing such shapes.

The only ducts disclosed in D1 were the air flow passages (13) which were explicitly disclosed for guiding the cold air (column 1, lines 41 to 43). The main aim of the cushions (22) was to avoid any loose play in the attachment of the cover (15) (see column 4, lines 1 to 4). Preventing an unforeseen air leakage was only a very minor role since the air flow channel (13) was already well delimited by the spacer damper (12), which was essential for the device of D1. Thus, the only ducts intended for distributing the cooling air within the meaning of claim 1 were the air flow passages (13), and as the appendices (fitting (20)) did not extend within these ducts (13) and the sealing elements (cushion (22)) were not positioned in them either, features 1.8 (appendices extending within the duct) and 1.12 ([sealing elements] positioned in the duct) were not disclosed in D1.

Document D7 disclosed neither sealing elements within the meaning of claim 1 nor a thermoformed cell. Deep drawing of the cell did not imply the use of heat in its production method.

(c) Admittance of the objection starting from D1

No objection on the grounds of lack of inventive step starting from D1 had been substantiated during opposition proceedings.

The opposition division noted in its preliminary opinion that D1 did not disclose the feature "thermoformed cell", but the then opponent did not react to this. Thus, any objection against this feature could and should have been filed during opposition proceedings and should not be admitted on appeal (Article 12(4) and (6) RPBA 2020).

Moreover, the appellant had not presented any reasoning against the distinguishing features relating to the duct (1.8 and 1.12) until the oral proceedings before the Board. Consequently, any objection in this respect was not to be admitted under Article 13(2) RPBA 2020.

(d) Inventive step

The distinguishing features, technical effect and objective technical problem proposed by the appellant were agreed to.

D7 did not suggest addressing the objective technical problem. Thus, any reasoning starting from this document and in consideration of the objective technical problem was tainted by hindsight.

Paragraph [0022] of D7 disclosed that the close fitting of the cover (11) within the duct (8) made it impossible for sealing elements to be arranged between the appendices (16) and the wall (17) of the cell in

the embodiment of Figure 2. The close fitting of the cover (11) of Figure 2 avoided air leakage and the skilled person would not have considered this problem. Moreover, the close fitting made it both unnecessary and impossible to provide sealing elements within the appendices and the thermoformed cell.

Starting from Figure 5, the shorter appendices (16) where the nubs (20) were arranged made it impossible for sealing elements to be provided in their region of contact with the wall (17). The skilled person could envisage multiple solutions for sealing the duct against cooling air leakage, not just the one defined in claim 1. Arranging sealing elements at the corner below the side strips (21) would not result in sealing elements positioned **in the duct**, contrary to what was specified in feature 1.12.

Reasons for the Decision

1. Main request - Added subject-matter, Article 100(c) EPC
- 1.1 The appellant argued that the skilled person reading claim 1 must be a person skilled in the technical field of the invention and not in "patent language".

However, this is not a relevant consideration when interpreting claim 1.

The appellant's argument relies on the premise that it is the skilled person who interprets the claim. It is correct that the claim is construed while taking into account the skilled person's viewpoint and knowledge,

in particular when determining the objective meaning of the technical features; however, it is for the Board to interpret the claim, not the skilled person. The question of whether or not the skilled person has knowledge of "patent language" is thus irrelevant when claims are to be interpreted.

- 1.2 Claim 1 has a clear structure in which a claimed device ("a refrigerating appliance") is defined by listing several elements comprised by the refrigerating appliance and, where necessary, by further defining these elements.

This follows from the syntactic logic of the claim. Features 1.1 (comprising: at least one internal compartment), 1.2 ([comprising] a refrigerating chamber), 1.4 ([comprising] a duct) and 1.7 (said refrigerating appliance comprising at least one sheet) define features comprised by the refrigerating appliance. The claim defines each of these features further until a point which is marked by a semicolon (as at the end of features 1.1 and 1.3), the conjunction "and" introducing a different sentence (as at the beginning of feature 1.7) or commas which enclose a subordinate sentence (see the end of features 1.7 and 1.9).

Reading claim 1 according to the common rules of syntax there is no doubt that what is defined in feature 1.10 is a further feature corresponding to the category of "elements comprised by the refrigerating appliance" since the wording "characterised in that" can only apply to the device defined at the beginning of the claim - when the claim is read with a mind willing to understand. The Board is not aware of any general rule of syntax in English which implies that the word "it"

in a sentence must always refer to the immediately preceding noun, in particular if this is in contradiction with the context (see point 1.4 below).

- 1.3 Reading the claim according to the usual understanding of patent language only confirms the same interpretation since the characterising portion generally defines what characterises the claimed device/method.

Originally filed claim 1 does not support the argument that a characterising portion is **generally** used to define subunits of the claimed device unless otherwise stated. The characterising portion of originally filed claim 1 starts with the wording "characterised in that **said duct** is ..." (emphasis added). Thus, the conclusion to be drawn when reading originally filed claim 1 is nothing more than that; in the exceptional case where the characterising portion defines a subunit of the claimed device, this is acknowledged by naming the particular element ("said duct") in an explicit way. This is not the case in feature 1.10.

- 1.4 Furthermore, if the interpretation of feature 1.10 proposed by the appellant were to be accepted, there would be a contradiction between features 1.10 ([the thermoformed cell] comprising sealing elements) and 1.13 ([sealing elements] arranged between the thermoformed cell and said appendices of the sheet) since the term "comprising" (in the context of feature 1.10, the claim as a whole and the usual use of the term "comprising" in patent claims; see e.g. Case Law of the Boards of Appeal, chapters II.E.1. and II.A.6.2) defines a component of the thermoformed cell rather than an external element arranged on it. This is also supported by the features focusing on the production of

the thermoformed cell and the duct forming part of it (features 1.5 and 1.6).

In order to exclude the contradiction in the claim, this interpretation of feature 1.10 when reading claim 1 should be excluded. Consequently, whether or not this excluded interpretation was originally disclosed is irrelevant for the present decision.

1.5 Thus, the appellant is correct in that the wording "characterised by comprising ..." from originally filed claim 8 was replaced with "characterised in that it comprises ..." in claim 1 as granted and feature 1.7 also uses different wording. However, the selected wording does not imply any change in the meaning of feature 1.10 (as explained above), and therefore no extension of subject-matter can be deduced from it.

1.6 In view of the above, the ground for opposition based on Article 100(c) EPC does not prejudice the maintenance of the patent.

2. Main request - Novelty, Article 54 EPC

2.1 D1

2.1.1 Feature "thermoformed cell"

Figure 1 of D1 is the usual schematic representation of a device included in patent documents for illustration purposes. Thus, it is not possible to draw clear and unambiguous conclusions about the way in which the cabinet (9) is produced merely by observing this figure. The cabinet (9) does not show any detail or complexity of shape which suggests thermoforming as the one and only manufacturing method, in particular since

Figure 1 shows the housing of the damper unit (10) to be made of separate pieces. Injection moulding - mentioned by the respondent in this context - would appear to be at least just as suitable for the manufacture.

The skilled person knows that thermoforming and injection moulding are different production processes, the former being characterised by the use of a plastic sheet which is heated to a temperature that allows it to be deformed before being formed into a specific shape in a mould.

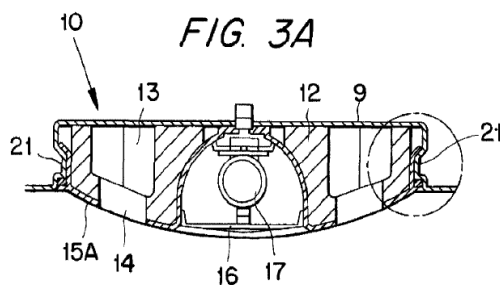
Consequently, the features related to a **thermoformed** cell (features 1.1, 1.5, 1.6, 1.7, 1.9 and 1.13) are at least not clearly and unambiguously disclosed in D1.

2.1.2 Feature "duct"

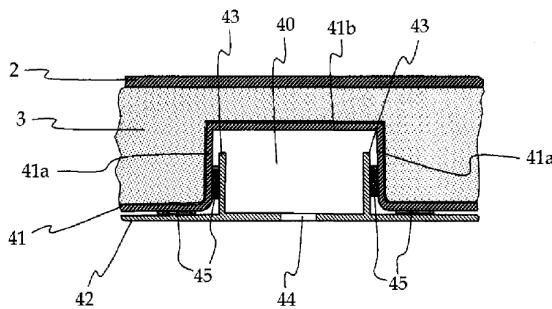
A "duct" is commonly understood as a pipe, tube or channel that conveys a substance (Merriam-Webster dictionary). This understanding is in line with the wording of the claim, in which the duct is defined as being for distributing the cooling air (feature 1.4).

Therefore, a duct within the meaning of claim 1 is the space guiding the cooling air. This space is explicitly stated to be the air flow passage (13) in D1, which is delimited by the spacer damper (12) (see column 1, lines 41 to 44 and Figure 3A, reproduced below). The skilled person would not interpret the whole "pocket" formed by the wall of the cabinet (9) around the air flow passage (13) as a duct within the meaning of claim 1 since the rest of this space plays no part in guiding the cooling air for distributing it into the refrigerating appliance (feature 1.4). While D1 shows

cushions (22) for preventing cold air leakages through the junction between the cabinet (9, 9A) and the cover (15) (see column 4, lines 1 to 4), this sealing only concerns the accidental leakage of cold air which might reach this point due to a leakage between the spacer damper (12) and the cabinet (9). Such minor leakage of cooling air does not convert the whole of the "pocket" into a duct within the meaning of claim 1, in particular feature 1.4.



The appellant's proposed interpretation of the feature "duct" with regard to D1 is not comparable with the embodiment disclosed in Figure 2a of the contested patent (reproduced below), in which a duct (40) intended for distributing cooling air is provided by the entirety of the deformation of the thermoformed cell (41) located between the side walls (41a) and is only occupied by the sealing elements (45) and the appendices (43) to a very minor proportion.



Furthermore, contrary to the appellant's reasoning, paragraph [0031] of the contested patent does not

suggest that further elements such as valves are included within the duct (40); it merely explains that these valves can be provided but does not specify their location. Figure 1 of the contested patent shows that the duct (40) is of such longitudinal dimensions that providing a valve - which, according to technical considerations, should be arranged at the entrance of the duct (40) or upstream of it - will not result in a construction as in D1.

Finally, it is noted that the spacer damper (12) is an essential feature of the refrigerating appliance disclosed in D1 since it enables the air flow passage (13) to be formed in the typical way (see column 1, lines 41 to 43: "typically includes a spacer damper").

The argument that the spacer damper (12) can be dispensed with when considering the freezer compartment (1) instead of the refrigerating compartment (2) is immaterial since the discussion hinges on the only duct clearly and unambiguously disclosed in D1, namely the one provided in connection with the damper unit (10) for the refrigerating compartment and not the freezer compartment (2).

Thus, the skilled person would not take it as implicit that a duct may be provided in D1 in which no spacer damper (12) was present.

In view of the above, features 1.8 ("said sheet comprising a pair of substantially parallel appendices extending within the duct in the same direction as that of the cooling air flow") and 1.12 ("[sealing elements] positioned in the duct") are not disclosed in D1 since the appendices (fittings (20)) do not extend within the

duct (air flow passage (13)) and the sealing elements (cushions (22)) are not positioned in the duct (13).

2.2 D7

2.2.1 Uncontested features

Document D7 discloses a refrigerating appliance of the no-frost type (see paragraph [0002]), in particular for household use, comprising (the references in brackets relate to Figures 1, 2 and 5 of D7):

- at least one internal compartment (4, 5) for preserving foodstuffs, defined by a cell (2);
- a refrigerating chamber (7 - between compartments 4 and 5) comprising an evaporator (see paragraph [0015]) adapted to cool the air and a fan (see paragraphs [0002] and [0019]; the disclosure of the circulation of cooled air and the activation of valves for selectively feeding cooled air implicitly discloses the use of a fan) for circulating the air inside said at least one internal compartment (4, 5);
- a duct (7, 8) for distributing the cooling air coming from the fan into said refrigerating appliance, said duct (7 - reference numeral to the left in Figure 1 -, 8) being obtained when forming said cell (2), in particular by shaping (see paragraph [0016], "Tiefziehen") said cell (2) in a manner such that it includes a projection extending towards a back wall (see Figure 1) of the refrigerating appliance;

and said refrigerating appliance comprising at least one sheet (11) which can be associated with the cell (2) for closing the duct (7, 8), said sheet (11)

comprising a pair of substantially parallel appendices (16) extending within the duct (7, 8) in the same direction as that of the cooling air flow (see Figures 2 and 5) and acting as a reference element for properly positioning (see paragraph [0023]) the sheet (11) relative to the cell (2).

This is not contested by the respondent.

2.2.2 Feature "thermoformed"

The internal cell (2) of document D7 is produced by deep drawing (see e.g. paragraphs [0015] and [0016]). D7 discloses that the usual material for producing the internal cell by deep drawing is plastic (see paragraph [0001]; "Kunststoff-Flachmaterial").

The skilled person knows that the technique of deep drawing applied to plastic implies the use of heat for transforming the plastic sheet using the corresponding mould. This corresponds to the basics of the concept of "thermoforming".

Thus, the cell (2) of D7 is a thermoformed cell.

Features 1.1 to 1.9 (see preceding point) are consequently disclosed in D7.

2.2.3 Features 1.10 to 1.14 (sealing elements)

The respondent does not contest that feature 1.11 ("in particular made of spongy material") is an optional feature with no limiting effect. The Board has no doubt in this respect either.

The appellant argued in writing that sealing elements within the meaning of features 1.10, 1.12, 1.13 and 1.14 ("sealing elements [...] positioned in the duct and arranged between the thermoformed cell and said appendices of the sheet to prevent any leakage of cooling air") were disclosed in Figure 5 of D7 since the nubs ("Noppen" 20) provided inherent sealing that prevented cooling air leaking between the thermoformed cell (2) and the appendices (16) ("Labyrinthdichtung").

This is not persuasive.

Firstly, the term "nubs" ("Noppen") indicates discrete protrusions distributed along the longitudinal axis of the duct instead of a continuous longitudinal protrusion which would engage the entirety of the length of the wall of the thermoformed cell (2). The continuity of the nubs (20) is a necessary condition if such an element is to be considered able to perform "sealing" which can "prevent any leakage of cooling air". No such longitudinal continuity can be derived from Figure 5 either.

Secondly, D7 does not disclose any properties of the nubs (20) related to a sealing function. The only information on their construction is the locking function they must provide and the schematic representation of Figure 5. No conclusions about an alleged sealing effect can be drawn from this information in a clear and unambiguous manner.

The appellant also argued that D7 discloses reliable air distribution through the ducts (7, 8) and does not disclose any leakage of air at the contact region between the thermoformed cell (2) and the appendices (16). Consequently, this contact region performed a

sealing function within the meaning of features 1.10, 1.12, 1.13 and 1.14.

This is not convincing since the skilled person understands from features 1.10, 1.12, 1.13 and 1.14 that the sealing **elements** must be a different and distinguishable entity as they are "arranged between the thermoformed cell and said appendices of the sheet". The contact surface between the appendices (16) and the thermoformed cell (2) is just a part of these two components and not a third entity. This reasoning is also applicable to the nubs (20) in the embodiment of Figure 5.

Thus, the subject-matter of claim 1 differs from D7 on account of the features related to the sealing elements, i.e. features 1.10, 1.12, 1.13 and 1.14.

2.3 Conclusion

The subject-matter of claim 1 is novel over D1 and D7 (Article 54(2) EPC).

Since features 8.1, 8.2, 8.4, 8.6 and 8.7 of method claim 8 essentially correspond to features 1.1 to 1.10, 1.12 and 1.13 of claim 1, the reasoning above applies to claim 8 *mutatis mutandis*.

3. Main request - Inventive step, Article 56 EPC

3.1 Admittance of the objection starting from D1

No substantiated objection starting from D1 as the closest prior art was raised in writing during the opposition proceedings. In this context, the clause "... or at least not inventive over document D1" ("...

oder zumindest nicht erfinderisch gegenüber der Druckschrift D1"; see notice of opposition, page 9, and letter dated 15 January 2020, page 4) is not sufficient to provide adequate substantiation.

According to the decision (point 12.2.3) and the minutes (point 5.3), the then opponent did not present any inventive step objection starting from D1 during the oral proceedings either. This has been confirmed by the appellant.

The appellant raised a substantiated objection of lack of inventive step starting from D1 for the first time with its statement setting out the grounds of appeal (see point II.3.2 of the statement). The only acknowledged distinguishing feature in that context was the feature "**thermoformed** cell". A short discussion about its alleged lack of inventiveness was provided in the document. This is an amendment to the appellant's case with regard to the opposition proceedings and its admittance is subject to Article 12(4) RPBA 2020.

With its reply to the notice of opposition, point 4.1, the patent proprietor had made the point that "thermoformed" was allegedly not disclosed by D1. Moreover, the opposition division's preliminary opinion annexed to the summons issued on 15 April 2019 already informed the then opponent that the division did not consider the features "**thermoformed** cell", "appendices extending within the duct" (feature 1.8) and "[sealing elements] arranged between the thermoformed cell and said appendices of the sheet" (feature 1.12) (among others) to be disclosed in D1.

Reasoning about why any of these features were obvious could and should have been filed - at the latest -

after the opposition division had made clear its preliminary opinion about these essential points of the discussion. It is noted that putting forward an objection of lack of novelty does not prevent a party from also arguing that the same feature also does not contribute to an inventive step, at least as a subsidiary argument. This is not detrimental to procedural economy. On the contrary, by "front-loading" the complete case, all parties can prepare and reply to the objections in an efficient manner.

However, the then opponent did not provide any argument about why any of these allegedly distinguishing features were obvious, either in its reply to the preliminary opinion dated 15 January 2020 or during the oral proceedings which took place on 14 July 2020 (i.e. more than a year after the preliminary opinion had been issued).

The Board cannot agree with the argument that the reasoning about the alleged implicit character of the feature "thermoformed" was obvious in view of the corresponding objection on the grounds of lack of novelty. It is not down to the opposition division or the patent proprietor to imagine how an opponent's arguments might be adapted to support a new objection. Each party is responsible for providing the appropriate arguments in support of its own case.

Thus, objections based on the obviousness of the distinguishing features "thermoformed", 1.8 and 1.12 could and should have been submitted during the opposition proceedings (Article 12(6), second sentence, RPBA 2020).

Furthermore, the appellant - in spite of the considerations forming the basis of the contested decision (see point 10.2.4) - did not provide any reasoning in its statement of grounds as to why distinguishing features 1.8 and 1.12 were obvious when starting from D1. Thus, any substantiation presented during the oral proceedings before the Board against the inventiveness of features 1.8 and 1.12 would be an amendment to the case at the last possible moment, and its admittance would be subject to Article 13(2) RPBA 2020. No exceptional circumstances can be discerned which could justify admitting a substantiation that could and should have been filed during the opposition proceedings or, at the latest, in earlier stages of the appeal proceedings.

In addition, the argument about the alleged *prima facie* relevance of the objection starting from D1 is not convincing either since the feature "thermoforming" is not the only distinguishing feature (see point 2.1 above). In the absence of any substantiation of further objections against features 1.8 and 1.12 - which even if it had been provided at the oral proceedings before the Board could no longer be admitted due to a lack of exceptional circumstances as explained above - the line of attack starting from D1 presented in the statement of grounds of appeal has no prospect of success and is therefore not *prima facie* relevant. For this reason alone, the appellant's argument regarding an alleged obligation on the Board's part to examine the allegedly *prima facie* relevant objection under Article 114(1) EPC is not convincing.

Consequently, the objection on the grounds of lack of inventive step starting from D1 is not admitted into

the appeal proceedings (Article 12(4) and (6) RPBA 2020).

3.2 D7 as the closest prior art

3.2.1 Distinguishing features and objective problem

As discussed above with respect to novelty, the subject-matter of claim 1 differs from D7 on account of features 1.10, 1.12, 1.13 and 1.14 ("sealing elements positioned in the duct and arranged between the thermoformed cell and said appendices of the sheet to prevent any leakage of cooling air"). Since feature 1.11 ("in particular made of spongy material") is only optional, it has no limiting effect and can be disregarded for this analysis.

The technical effect of the distinguishing features is that cooling air cannot leak between the thermoformed cell and the appendices.

Therefore, the corresponding objective technical problem can be formulated as to prevent or reduce leakage of cooling air.

This was argued by the appellant and agreed to by the respondent. The Board concurs.

3.2.2 Motivation for the skilled person

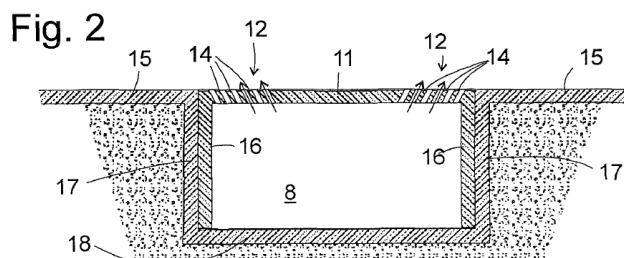
According to the respondent, the contention that the skilled person would address the objective technical problem in the absence of a motivation for it in the closest prior art was an approach biased by hindsight.

This is not convincing.

It is not generally required that the "closest" prior art, i.e. the starting point of the inventive step assessment, prompts the skilled person in the direction of the claimed invention. This motivation may also come from any other teaching which is combined with the "closest" prior art.

3.2.3 Starting from the embodiment of Figure 2

Paragraph [0022] of D7 shows that the appendices ("Stege" (16)) of the embodiment represented in Figure 2 are clamped ("geklemmt") between the side walls (17) of the thermoformed cell (2). Figure 2 (reproduced below) confirms that complete contact between the appendices (16) and the thermoformed cell (2) along the whole of the duct (8) is foreseen for this purpose.



The appellant argued that if the close fitting of the appendices (16) within the duct (8) were considered to prevent the leakage of cooling air, there would be no objective technical problem to solve and the subject-matter of claim 1 would not involve an inventive step.

The argument that there would be no objective technical problem is not persuasive since the objective technical problem in such a configuration would be how to provide alternative (or even improved) sealing means for the cooling air.

If the appellant's logic were followed, the skilled person would need to consider arranging sealing elements - which are *per se* well known to the skilled person - between the appendices (16) and the side walls ("Seitenflanken" (17)) to replace (or even augment) the sealing provided by the clamping.

Providing sealing **elements** between the thermoformed cell (2) and the appendices (16) clamped between the side walls (17) would necessitate several modifications since some extra space would be necessary for holding the sealing elements. This would have a direct effect on the intended clamping. The Board cannot agree with the assertion that the sealing elements would improve the retention since it has not been demonstrated that **all** sealing materials provide a high friction coefficient. Similarly, it has not been shown that providing a thin sealing coating on the appendices (16) or the side walls (17) of the thermoformed cell (2) is compatible with mounting the sheet (11) into the duct (8), since the dimensions must tightly correspond to each other in order to ensure clamping. In this context it is noted that the tolerances mentioned in paragraph [0009] relate to the depth of the duct rather than to its width, as the problem mentioned in that context is to provide the duct cover (the sheet) so as to be level with the surroundings ("die eine exakt bündige Anbringung der Deckplatte schwierig machen"). Providing sealing elements in between the clamping seal between the sheet and the duct would endanger not only the tight fit but also the clamping connection. Finally, even if the clamping of the appendices (16) between the side walls (17) were variable to some extent along the length of the connection, the presence of sealing means would represent an obstacle when sliding the cover (11)

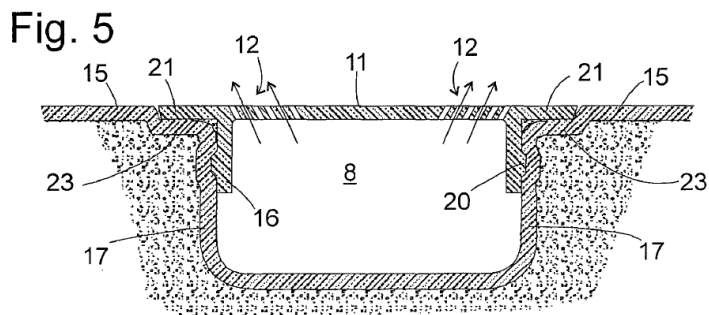
into the duct (8) in view of the close fit between both pieces (see Figure 2). Bending of the appendices (16) - even if they were flexible enough - would not help in that case since the main problem would be the dragging that would arise when the sealing element is contacted by the appendices (16) (if the sealing means were attached to the side wall (17)) or the upper corner of the side wall (17) (if the sealing means were attached to the appendices (16)).

Concerning the alleged obviousness of providing a recess for the sealing elements in the appendices (16), no teaching can be found which would motivate the skilled person to do so. Furthermore, the appendices (16) would become too thin to perform their function in a reliable way if they had to have a recess for this purpose, or they would have to bulge inwards if their cross section were to be kept, thus reducing the volume of the duct.

In view of the above, the skilled person would need to consider and address several problems in order to implement sealing elements in the way defined in claim 1. This goes beyond a routine modification which could be made without an inventive step. The reference to the contested patent as proof that the skilled person would envisage this modification is immaterial since this document does not belong to the prior art.

3.2.4 Starting from the embodiment of Figure 5

Figure 5 (reproduced below) shows small empty spaces adjacent to the corners formed by the appendices (16) and the side strips (21) facing the transition strips (23) of the thermoformed cell (5).



These small spaces cannot be considered to be "positioned in the duct" as defined in feature 1.12.

The duct according to feature 1.4 is for distributing the cooling air coming from the fan into the refrigerating appliance. Feature 1.5 specifies that the duct is obtained when thermoforming the thermoformed cell.

The skilled person understands that this corresponds to duct (8) in Figure 5 of D7, i.e. to the space created by the deformation of the thermoformed cell which is intended to be used for the distribution of the cooling air. This is the volume defined **between** the side walls (17).

The small spaces mentioned by the appellant are **outside** this volume since they extend outwards from the internal face of each side wall (17), and any sealing element arranged in these small spaces would therefore not be "positioned in the duct" as defined in feature 1.12.

The location of the small spaces is not comparable with the embodiment of Figure 2a of the contested patent (reproduced below). The sealing elements (45) arranged vertically in this figure are clearly positioned in the duct (40) produced by the deformation of the

thermoformed cell, i.e. between the side walls (41a) defining the volume of said cell.

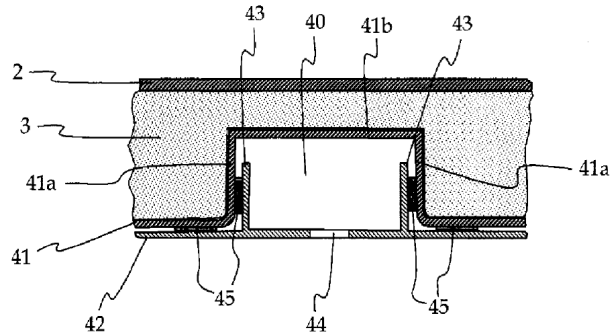


Fig. 2a

The appellant also argued in writing that providing sealing elements in combination with the nubs (20) of the embodiment disclosed in Figure 5 would be obvious by providing sealing means in the space available below or above the nub (20) after engagement with the corresponding chamber in the side wall of the thermoformed cell (2).

This is not persuasive.

No spaces above or below the nub (20) once engaged in the receiving chamber can be seen in Figure 5. Providing such spaces - as also argued by the appellant - does not appear to be straightforward given the small diameter of the appendices. Thus, analogous considerations about the relative dimensions of the nubs (20) and the duct (8) and their incompatibility with the presence of sealing elements at first sight as explained in the preceding point also apply here, including the need for non-obvious modifications to obtain such a combination. This is moreover the case in view of the fact that a flexible locking element inherently is tightly received in its receiving part while moving towards it.

As in the case of the objection starting from Figure 2, other ways of addressing the posed problem would be conceivable for the skilled person apart from the claimed one. For instance, in line with the appellant's argument about the obviousness of providing a room for housing sealing elements on a wall, sealing could be achieved by elements arranged between the side strip (21) and the transition strip (23) without affecting the alignment of these two elements. In this case the arrangement of sealing elements would not be hampered by elements sliding on each other as was the case in the embodiment of Figure 2.

3.3 Conclusion

In view of the above, the subject-matter of claim 1 involves an inventive step (Article 56 EPC).

4. Article 101(2) EPC

Since none of the invoked grounds for opposition prejudices the maintenance of the European patent, the Board sees no reason to set aside the opposition division's decision to reject the opposition.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



A. Pinna

C. Herberhold

Decision electronically authenticated