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Datasheet for the decision of 25 November 2020

Case Number: T 0092/17 - 3.2.03

Application Number: 04103090.9

Publication Number: 1496324

IPC: F25D21/00

Language of the proceedings: EN

Title of invention:
Refrigeration appliance with automatic time-determined defrost

Patent Proprietor:
WHIRLPOOL CORPORATION

Opponent:
Arçelik Anonim Sirketi

Headword:

Relevant legal provisions:
EPC Art. 100(c), 100(a), 54(2)
EPC R. 115(2)
RPBA 2020 Art. 15(3)

Keyword:
Grounds for opposition - added subject-matter (no)
Novelty - (no)
Claims - interpretation of ambiguous terms
Oral proceedings - held in absence of party

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
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Beschwerdekammern

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Case Number: T 0092/17 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 25 November 2020

Appellant: (Opponent)	Arçelik Anonim Sirketi E5 Ankara Asfalti Uzeri Tuzla 34950 Istanbul (TR)
Representative:	Louis Pöhlau Lohrentz Patentanwälte Postfach 30 55 90014 Nürnberg (DE)
Respondent: (Patent Proprietor)	WHIRLPOOL CORPORATION 2000 M-63 Benton Harbor Michigan 49022 (US)
Representative:	Spina, Alessandro Whirlpool EMEA SpA Via Carlo Pisacane, 1 20016 Pero (MI) (IT)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 11 November 2016 rejecting the opposition filed against European patent No. 1496324 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	C. Donnelly
Members:	R. Baltanás y Jorge
	N. Obrovski

Summary of Facts and Submissions

I. European patent No. 1 496 324 relates to a refrigeration appliance with automatic time-determined defrost.

II. An opposition was filed against the patent based on Articles 100(a) and (c) EPC together with Articles 54 and 56 EPC.

III. The appeal lies from the decision of the opposition division to reject the opposition.

The opponent (hereinafter: the "appellant") filed an appeal against the above-mentioned decision of the opposition division.

In a communication pursuant to Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA), the Board indicated its preliminary opinion of the case.

The patent proprietor (hereinafter: "the respondent") informed the Board on 19 October 2020 that it would not be attending the oral proceedings.

Oral proceedings were held in the absence of the respondent on 25 November 2020.

IV. Requests

The appellant requests that the decision under appeal be set aside and the patent be revoked on the grounds

of added subject-matter (Article 100(c) EPC), and lack of novelty and inventive step (Article 100(a) in conjunction with Articles 54 and 56 EPC).

The respondent requested that the appeal be dismissed.

V. Claim 1 as granted, including the numbering of its features as adopted by the parties, reads as follows (the added features with regard to originally filed claim 1 are marked in bold):

F1 *A refrigeration appliance,*
F1a ***such as a*** *refrigerator,freezer and the like,*
F2 *comprising an evaporator (5),*
F3 *a compressor (8) and*
F4 *electrical defrost means (6) for said evaporator (5),*
F5 *a microprocessor (13)*
F6 *associated with time measurement means (15, 18) providing the microprocessor (13) with data relative to the functioning of the compressor (8) for the purpose of obtaining from said data a percentage operation of the compressor (8) and an indication of the predicted commencement of defrost (Hdl), characterised in that*
F7 ***the microprocessor (13) is configured so that*** *this indication* ***is*** *compared with one or more* ***low energy tariff*** *time bands*
F8 *with the purpose of advancing or delaying if necessary the effective commencement of the next defrost so that it takes place within the established* ***low energy tariff*** *time band.*

Dependent claims 2 and 3 concern preferred embodiments of the refrigeration appliance of claim 1.

VI. Claim 3 as granted reads as follows:

A refrigeration appliance as claimed in claim 1, characterised in that the value of the indication of the predicted commencement of defrost (Hd1) is compared with a predetermined value, the earlier of the two being chosen as the time to activate the next defrost, and the chosen earlier value is compared with one or more time bands to examine the convenience of attributing this chosen earlier value to one or other band in order to advance or delay if necessary the effective commencement of the next defrost so that this takes place within the established time band.

VII. State of the art

The following document has been cited, both in the grounds of appeal and during the opposition proceedings, and is relevant for this decision:

E7: US-A-5 415 005

VIII. The appellant's arguments can be summarised as follows.

(a) Interpretation of feature F8

The meaning of the feature F8 is clear and does not require interpretation, since the word "*it*" can only refer to the "*effective commencement of the next defrost*". Thus, the effective commencement of the next defrost is the event which "*takes place within the established low energy tariff time band*" according to claim 1, and not the defrost as a whole.

(b) Added subject-matter, Article 100(c) EPC

The introduction of the feature "low energy tariff" in features F7 and F8 of granted claim 1 is not supported by the application as filed, and was only disclosed in association with the feature "night time", as disclosed in paragraph [0008] of the A1 publication. Concerning the disclosures in the last sentence of paragraph [0013] and in paragraph [0021] of the A1 publication, the presence of more than one time band does not imply that a time band would be outside night time and, in any case, these disclosures are only relevant for the particular embodiment of the patent application.

The term "low energy tariff time band" is not disclosed as such in the originally filed application. Even the wording used in paragraph [0008] of the A1 publication is different from this. The wording in paragraph [0013] cannot be taken as a general disclosure, since it relates to a particular embodiment.

Claim 3 is broader than claim 1, since the feature "to examine the convenience of attributing" is unclear and has no limiting effect, and also since the feature "one or more time bands" is not restricted to "low energy tariff time bands" as in claim 1.

(c) Novelty, Article 54(2) EPC

Claim 1 makes no link between the "percentage operation of the compressor" of feature F6 and the solution of the problem, since the role of this parameter is not defined in claim 1. Consequently, feature F6 has to be interpreted in a broad way, since it merely defines a microprocessor which is suitable for obtaining such a parameter.

Document E7 discloses computing means suitable to calculate different ratios concerning the compressor (column 8, lines 26 and further). The computing means receive input of time measurement means (column 7, lines 44 and further). Thus, the computing means of E7 are suitable to obtain a percentage operation of the compressor as defined in feature F6.

Document E7 discloses a commencement of the defrost within a time band corresponding to an off-peak energy consumption period. The off-peak energy consumption period is a synonym of the term "*low energy tariff time band*", thus feature F8 is also anticipated by E7.

Further, the term "low energy tariff time band" used in features F7 and F8 refers to purely mercantile aspects of energy supply. The presence of a multiple tariff electricity meter and of a provider offering a special energy tariff having time dependent energy costs are therefore necessary for their implementation.

Claim 1 is therefore not novel over E7.

IX. The respondent's arguments can be summarised as follows.

(a) Interpretation of feature F8

The technical meaning of this feature is to have the defrost entirely within the time band.

(b) Added subject-matter, Article 100(c) EPC

The feature "*low energy tariff time band*" finds support in originally filed claim 1 plus the application as a

whole. The disclosure of paragraph [0013] concerning "*night time*" is just provided as an example without limiting effect. The concept of "night time" is not necessarily linked to low energy tariff time bands, since these are usually scheduled by utility companies depending on the average energy consumption, which is not always low during night.

The objections of the appellant concerning granted claim 3 are related to a clarity issue, rather than added subject-matter.

(c) Novelty, Article 54(2) EPC

Document E7 does not disclose that an indication of the predicted commencement of defrost is based on a percentage operation of the compressor (feature F6), since it merely mentions compressor run time (column 7, line 44).

In E7 the defrost cycle is initiated during the off-peak energy consumption time of the local utility company. None of the terms used in E7 is identical to the claimed "low energy tariff time band".

Reasons for the Decision

1. Rule 115(2) EPC and Article 15(3) RPBA 2020

The respondent, who was duly summoned to the oral proceedings on 25 November 2020, informed the Board on 19 October 2020 that they would not attend these oral proceedings.

The Board decided to continue the proceedings in the absence of the respondent, who was considered as relying only on its written case (Rule 115(2) EPC, Article 15(3) RPBA 2020).

2. Extension of subject-matter, Article 100(c) EPC

2.1 Disclosure of the wording "low energy tariff time band"

The originally filed description disclosed that the aim of the invention was to take advantage of time bands where the cost of the energy is lower. Originally filed page 2, lines 5 to 6, disclosed that "*time bands*" were considered in the context of price of energy. Page 2, lines 13 to 18, disclosed the expression "*hours of low energy tariff*". From this, it is evident that the application used the term "hours" as a synonym for "time bands" in the context of the discussion about energy costs. Consequently the expression "low energy tariff time bands" finds a support in the disclosure of page 2.

Further, an explicit disclosure can be found in lines 1 to 3 of originally filed page 4, where the expression "*time band of low tariff electrical energy*" was used. The fact that this wording was disclosed in connection with a particular embodiment is irrelevant, since the skilled person reading the originally filed application would understand that such a time band corresponds to the hours of low energy tariff of page 2, lines 13 to 18, concerning the general disclosure of the invention.

2.2 "Low energy tariff time band" vs "night-time"

Contrary to the opinion of the appellant, the feature "low energy tariff time band" used in amended claim 1

was not originally disclosed as being limited to the concept of "night-time".

Originally filed claim 1 defined an effective commencement of the next defrost "*so that it takes place within the established time band*". No reference to night-time was present in this claim.

Furthermore, the skilled person reading the originally filed application finds an indication that low energy tariff time bands are not necessarily limited to night-time. The dependence of the price of energy as a function of peak hours is disclosed in the passage at originally filed page 2, lines 5 to 7. Therefore, the skilled person, taking into account their knowledge of the energy requirements in an electrical network, would infer that any period not coinciding with peak hours is by implication a low energy tariff time band.

This is confirmed by the disclosures in originally filed page 4, lines 1 to 3, and page 8, lines 9 to 11, where a single low energy tariff time band during night-time was fixed for the example, but leaving the door open to a different low tariff time band, or even to a plurality of them.

The disclosure of the originally filed description, in combination with the "time bands" of originally filed claim 1, which are not linked to a night-time, indicated to the skilled person that the invention was equally applicable to any time band where a low energy tariff is available.

2.3 In view of the above, no extension of subject-matter can be observed.

3. Novelty, Article 54(2) EPC

Document E7 discloses all features of claim 1.

3.1 Disclosure of features F1 to F5

E7 discloses a refrigeration appliance, such as a refrigerator, freezer and the like (refrigerator 50; see also column 4, lines 3 to 7), comprising an evaporator 62, a compressor 64, electrical defrost means (defrost heater 68) for said evaporator 62, and a microprocessor 102.

Features F1 to F5 are thus disclosed by E7.

3.2 Disclosure of the first portion of feature F6

3.2.1 The first portion of feature F6 reads:
"[a microprocessor] *associated with time measurement means (15, 18) providing the microprocessor (13) with data relative to the functioning of the compressor (8) for the purpose of obtaining from said data a percentage operation of the compressor (8)*".

Claim 1 does not define any further role for the "percentage operation of the compressor" which would imply that this parameter is actually obtained in the claimed device. In the absence of further features in the claim which require the use of the percentage operation of the compressor, claim 1 must be interpreted as defining a microprocessor suitable for the purpose of obtaining a percentage operation of the compressor, but not limited to a microprocessor actually configured (e.g. programmed) to obtain this parameter.

Therefore, claim 1 only defines the percentage operation of the compressor in the context of feature F6 as an aim to be achieved. According to this feature, the time measurement means only needs to provide the microprocessor with data relative to the functioning of the compressor. In order to fulfil the next requirement ("*for the purpose of obtaining from said data a percentage operation of the compressor*"), the data must be such that they enable the calculation of a percentage operation of the compressor from them, and the microprocessor must be a device suitable for this calculation. However, claim 1 does not define what the particular "percentage operation" of the compressor is, or how it should be calculated. The only limitation introduced by claim 1 in this respect is that such a parameter can be obtained from data relative to the functioning of the compressor as provided by some time measurement means.

Thus, any document where time measurement means provide data relative to the functioning of a compressor which can be used by a microprocessor to obtain any parameter which can be understood as a "percentage operation of the compressor" discloses the first portion of feature F6.

3.2.2 Document E7 discloses time measurement means connected to the microprocessor 102 in the form a clock (see column 7, line 49) which counts the compressor run time (see column 7, lines 43 and 44, and column 8, lines 14 to 17), the time where the compressor is not working (see column 8, lines 21 to 25), and the time elapsed in a 24 hours period (see column 8, lines 23 to 25: If a 24 hour record of averaged consumption is kept, then it follows that such a time period must be counted by the time measurement means; see also figure 8).

The microprocessor 102 is suitable to obtain a percentage operation of the compressor from the data provided by the time measurement means for the following reasons:

The microprocessor 102 is provided by the time measurement means with data relative to the functioning of the compressor, i.e. with the run time of the same (see column 7, lines 43 and 44, and column 8, lines 14 to 17);

The microprocessor is also provided with a total time measurement up to a 24 hours period (see column 8, lines 23 to 25);

The microprocessor is capable of carrying out complex mathematical operations such as the calculation of an averaged power consumption and its smoothing (see column 8, lines 23 to 31);

In view of its mathematical capacities, the microprocessor 102 is suitable to perform the operation of obtaining a parameter falling under the definition of "percentage operation of the compressor" by making calculations based on the run time of the compressor and the total elapsed time within a 24 hour period (e.g. by dividing the compressor run time between the total elapsed time).

3.2.3 The first portion of feature F6 is thus disclosed by E7.

3.3 Disclosure of the second portion of feature F6

3.3.1 The second portion of feature F6 reads:

"[a microprocessor] *associated with time measurement means (15, 18) providing the microprocessor (13) with data relative to the functioning of the compressor (8) for the purpose of obtaining from said data* [..] *an indication of the predicted commencement of defrost (Hdl)*".

3.3.2 As explained in point 3.2.2 above, E7 discloses time measurement means providing the microprocessor 102 with data relative to the functioning of the compressor, including the run time of the compressor (see column 7, lines 43 and 44, and column 8, lines 14 to 17) and a time counting of up to 24 hours which enables a calculation of the averaged power consumption of the compressor (see column 8, lines 23 to 31).

3.3.3 Since both the run time of the compressor and the averaged power consumption are used by the microprocessor 102 for obtaining an indication of the predicted commencement of the next defrost (see column 7, lines 43 to 48, and column 8, lines 35 to 42), the second portion of feature F6 is also disclosed by E7.

3.4 Interpretation of "low energy tariff time bands" in features F7 and F8

Claim 1 concerns a refrigeration appliance. However, the term "low energy tariff time band" in features F7 and F8 of claim 1 does not define a feature of the refrigeration appliance itself, but makes reference to an external entity, namely the electrical network and its pricing policy. Leaving aside the question to what extent the features of F7 and F8 have technical character or are even part of the claimed device, the Board considers that the term "off-peak hours" corresponds to "low energy tariff time bands" (see

point 2.2 above, third paragraph; see also column 1, lines 39 to 44 of the patent specification).

Thus, any device disclosing a refrigeration appliance which allows a comparison with time bands corresponding to off-peak hours (i.e. not coinciding with peak hours) discloses this aspect of features F7 and F8.

3.5 Interpretation of feature F8

The feature F8 reads: "*with the purpose of advancing or delaying if necessary the effective commencement of the next defrost so that it takes place within the established low energy tariff time band*".

The wording of the feature is clear and unambiguous in that the term "*it*" refers to the previously mentioned "*effective commencement of the next defrost*". Thus it is the effective commencement of the next defrost which has to take place within the established low energy tariff time band.

Considering that the term "*it*" refers to "*the next defrost*" would artificially isolate those words from the global concept in which they appear (i.e. the effective commencement of the next defrost), which forms the relevant object to which reference is made in the last part of the sentence.

Moreover, since the wording of the claim is clear and does not give rise to any ambiguity, it is not necessary to resort to the description in order to interpret the feature. In any case, the description confirms that the aim of the invention is to ensure that the defrost cycle takes place at least partly during the hours of low energy tariff (see column 2,

lines 3 to 5), thus not requiring that the whole defrost cycle is contained within this time band.

Thus, any document disclosing an effective commencement of the next defrost taking place within a established low energy tariff time band anticipates the concerned aspect of feature F8, even if a part of this next defrost takes place outside the claimed time band.

3.6 Disclosure of features F7 and F8

The microprocessor 102 of E7 analyzes the consumption pattern of the refrigeration appliance in order to determine the off-peak periods (see column 4, lines 25 to 28, column 8, line 43, to column 9, line 14, and also claim 10). This allows the microprocessor to compare the indication for start of a defrost cycle with the off-peak periods, advancing the initiation of the next defrost cycle "*just prior to the predicated start*" in order to make it coincide with these periods (see column 4, lines 26 to 47, and column 9, lines 15 to 36).

In view of the considerations in points 3.4 and 3.5 above, it must be concluded that E7 discloses the features F7 and F8, since the effective commencement of the defrost cycle of E7 is, if necessary, advanced or delayed such that it takes place within the established low energy tariff time band.

3.7 Conclusion

The subject-matter of claim 1 is not novel with regard to document E7.

4. The only request from the respondent is therefore not allowable.

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:

H. Jenney C. Donnelly

Decision electronically authenticated