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**Datasheet for the decision  
of 30 August 2021**

**Case Number:** T 1054/17 - 3.2.03

**Application Number:** 06111509.3

**Publication Number:** 1705442

**IPC:** F25D25/02, A47B96/02

**Language of the proceedings:** EN

**Title of invention:**  
A refrigerator shelf

**Applicant:**  
Gemtron Corporation

**Headword:**

**Relevant legal provisions:**  
EPC Art. 54, 54(3), 56, 123(2)

**Keyword:**  
Novelty - (yes)  
Inventive step - (yes)  
Amendments - allowable (yes)

**Decisions cited:**

**Catchword:**



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Case Number: T 1054/17 - 3.2.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.03**  
**of 30 August 2021**

**Appellant:** Gemtron Corporation  
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**Representative:** dompatent von Kreisler Selting Werner -  
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**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 10 November  
2016 refusing European patent application No.  
06111509.3 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman** C. Herberhold  
**Members:** C. Donnelly  
E. Kossonakou

## Summary of Facts and Submissions

- I. The appeal lies from the decision of the examination division refusing European application no. 06 111 509.3.
- II. In its decision the examining division held that independent claim 1 of both the main and auxiliary requests before it lacked novelty with respect to WO 2006/044641 A2 (European patent application no. 05813306) (D3) and lacked an inventive step in view of EP 0 527 658 (D4) and a combination of US 5 228 764 A (D1) and US 2004/173549 (D2). It also held that dependent claim 29 comprised added subject-matter.
- III. The applicant (hereinafter: the "appellant") appealed against this decision.
- IV. *Prior art*

The following documents are cited in the European search report:

- D1: US 5 228 764 A;  
D2: US-2004/0173549 A1;  
D3: WO 2006/044641 A2;  
D4: EP 0 527 658 A1;  
D5: US 5 358 773 A;  
D6: EP 0 856 712 A2;  
D7: US 870 439 A;  
D8: US 5 069 408 A;  
D9: US 6 811 045 B.

In their submissions of 16 March 2017, the appellant also referred to:

Enclosure A: Extract of online dictionary [www.dictionary.com](http://www.dictionary.com) for the definition of "flange".

V. *Requests*

The appellant requests that the decision under appeal be set aside and that a patent be granted on the basis of the sole request submitted with letter of 31 May 2021.

VI. Claim 1 of the main request reads:

"A refrigerator shelf assembly (10, 100), comprising:

a pair of metal shelf brackets (12, 13), wherein each of the pair of shelf brackets (12, 13, 112, 113) comprises a shelf arm (30, 31) and a shelf panel support flange (40, 41, 140, 141), wherein each shelf arm (30, 31) is disposed in substantially parallel spaced relationship to the other shelf arm (30, 31)

a shelf panel (11, 111) having an upper surface and a planar lower surface; and

an adhesive located between each shelf panel support flange (40, 41, 140, 141) and the lower surface (25, 125) of the shelf panel (11, 111) for directly adhesively bonding the same to each other so that the adhesive is the sole connection between the shelf panel (11, 111) and each of the pair of shelf brackets (12, 13, 112, 113),

characterized in that

planar upper surfaces of each of the shelf panel support flanges are in a substantially common plane with the planar lower surface of the shelf panel, and

each of the shelf panel support flanges (40, 41, 140, 141) comprises a reservoir between adjacent planar upper surfaces the reservoir opening in a direction toward the lower surface (25, 125) of the shelf panel, and wherein the adhesive is at least partially located in the reservoir."

VII. The appellant argued essentially the following:

Claim 1 of the now sole main request was based on a combination of claims 1 and 2 as originally filed, with the feature "planar upper surfaces of each of the shelf panel support flanges" being based on the original disclosure in paragraph [0037] and the relating figures. The added subject-matter objection against then claim 29 under point 14.2 of the decision had been answered by replacing "means" with "hook" in claim 21 of the present main request.

None of the prior art documents comprised a refrigerator shelf assembly with panel support flanges comprising a reservoir between adjacent planar upper surfaces, the reservoir opening in a direction toward the lower surface of the shelf panel, and wherein the adhesive is at least partially located in the reservoir. Moreover, a combination of the various documents cited in the European search report was not obvious.

## Reasons for the Decision

1. *Basis for the amendments, Art. 123(2) EPC*

The features of claim 1 of the sole request shown in bold indicate those directly based on claims 1 and 2 as filed.

A refrigerator shelf assembly (10, 100), comprising:

**a pair of metal shelf brackets (12, 13), wherein each of the pair of shelf brackets (12, 13, 112, 113) comprises a shelf arm (30, 31) and a shelf panel support flange (40, 41, 140, 141), wherein each shelf arm (30, 31) is disposed in substantially parallel spaced relationship to the other shelf arm (30, 31)**

**a shelf panel (11, 111) having an upper surface and a planar lower surface; and**

**an adhesive located between each shelf panel support flange (40, 41, 140, 141) and the lower surface (25, 125) of the shelf panel (11, 111) for directly adhesively bonding the same to each other so that the adhesive is the sole connection between the shelf panel (11, 111) and each of the pair of shelf brackets (12, 13, 112, 113),**

characterized in that

planar upper surfaces of each of **the shelf panel support flanges are in a substantially common plane** with the planar lower surface of the shelf panel, and

**each of the shelf panel support flanges (40, 41, 140, 141) comprises a reservoir between adjacent planar upper surfaces the reservoir opening in a direction toward the lower surface (25, 125) of the shelf panel, and wherein the adhesive is at least partially located in the reservoir."**

The feature of the planar upper surfaces of each of the shelf panel support flanges being in a substantially common plane with the planar lower surface of the shelf panel is disclosed at paragraphs [0032] and [0037] of the description and Figures 4, 8, 9, 13 and 14 as filed. The direct nature of the bonding is also evident from these figures.

Claim 2 as filed provides support for the presence in broad terms of a reservoir in each of the shelf panel support flanges. In view of this it is not considered that claim 1 should be limited to the specific embodiment comprising the U-shaped reservoir detailed at paragraph [0031] of the description.

Claim 21 (corresponding to claim 29 underlying the decision) now specifies the "means for mounting" thus overcoming the Article 123(2) EPC objection (see e.g. point 14.2 of the impugned decision). Basis for the "hooks" can be found in the original description, paragraph [0007], first sentence.

2. *Novelty, Article 54 EPC*

2.1 D1 discloses (see e.g. Figure 2):

"A refrigerator shelf assembly (16), comprising:



a pair of metal shelf brackets, wherein each of the pair of shelf brackets comprises a shelf arm (28,29) and a shelf panel support flange (30,31), wherein each shelf arm (28,29) is disposed in substantially parallel spaced relationship to the other shelf arm (28,29)

a shelf panel (40) having an upper surface and a planar lower surface; and

an adhesive located between each shelf panel support flange (30,31) and the lower surface of the shelf panel (40) for directly adhesively bonding the same to each other so that the adhesive is the sole connection between the shelf panel (40) and each of the pair of shelf brackets (28,29) (see col. 2, lines 59 to 65).

and wherein

planar upper surfaces of each of the shelf panel support flanges are in a substantially common plane with the planar lower surface of the shelf panel (40), and

The subject-matter of claim 1 differs therefrom in that:

each of the shelf panel support flanges comprises a reservoir between adjacent planar upper surfaces, the reservoir opening in a direction toward the lower surface of the shelf panel, and wherein the adhesive is at least partially located in the reservoir.

2.2 D2 discloses a shelf bracket assembly in which the panel 18 comprises specific cut-outs and profiles for engagement with corresponding parts of the bracket and support posts. There is likewise no disclosure of an

adhesive comprising reservoir with adjacent planar upper surfaces.

- 2.3 D3 is prior art under Article 54(3) EPC and can be taken into account for the purposes of novelty only.

The generally horizontal and partially curved support portion of support brackets of the embodiments shown in Figures 3,5,7,9,10 and 11 is considered to be a flange since it is a projecting rim according to the first definition of the dictionary extract of Enclosure A, referred to by the appellant and filed with the statement of grounds of appeal. However, the board agrees with the appellant that this flange cannot be said to comprise planar upper surfaces on either side of a reservoir for adhesive. In all of the embodiments of Figures 3,5,7,9,10 and 11, the outer edge of the support flange is simply bent upwards and forms a sharp edge which is in contact with the lower surface of the shelf panel.

- 2.4 The examining division's assertion that D4 discloses brackets bonded to a shelf panel is incorrect since the shelf panel is secured to the bracket by means of a protrusion, such as a stud or clip, and an aperture adapted to engage the protrusion (see D4, column 1, line 47 to column 2, line 11). Adhesives are used to bond some of the components together, but are not used to bond the shelf to the bracket.

- 2.5 D5 relates in general to a structure having a surface including a guide groove to which an adhesive, fed from a movable nozzle, is applied before connecting an object to the surface. D5 does not disclose a refrigerator shelf assembly comprising a pair of metal

shelf brackets nor any of the other features specifically related to such an assembly.

2.6 D6 is only concerned with the construction of a refrigerator shelf panel, but does not detail how it is supported within the refrigerator compartment.

2.7 D7 relates to an assembly comprising a bracket which can be fitted at various vertical positions in a supporting rail. The assembly is not specifically intended for use in a refrigerator and there is no explicit disclosure of the type of panel which is to be supported by the brackets. The planar upper surfaces of the metal brackets do not comprise a reservoir.

2.8 D8 discloses a general-purpose household shelving system. The shelf panels are secured to the support brackets using foam discs which have adhesive applied to both sides (see column 8, line 65 to column 9, line 10).

2.9 D9 (see in particular Figures 9 to 12) relates to a fridge shelf panel support system in which the shelf panel is bonded to the support bracket flange by means of adhesive tape (128). Therefore, the subject-matter of claim 1 differs from the embodiment shown in Figures 9 to 12 of D9 in that:

- each of the shelf panel support flanges comprises a reservoir between adjacent planar upper surfaces the reservoir opening in a direction toward the lower surface of the shelf panel, and wherein the adhesive is at least partially located in the reservoir.

2.10 Therefore, the subject-matter of claim 1 is new with respect to documents D1 to D7.

3. *Inventive step, Article 56 EPC*

3.1 D1 or D9 are the most realistic starting out points for the assessment of inventive step since these are the only documents which relate specifically to a refrigerator shelf assembly, comprising support brackets for a shelf panel.

3.2 As detailed above the subject-matter of claim 1 differs from the assemblies disclosed in D1 and D9 in that:

each of the shelf panel support flanges comprises a reservoir between adjacent planar upper surfaces the reservoir opening in a direction toward the lower surface of the shelf panel, and wherein the adhesive is at least partially located in the reservoir.

3.3 The provision of a reservoir has the technical effect of facilitating the positioning of the adhesive since the required location is predefined which would assist in avoiding excess adhesive leaking over the support flange edges.

3.4 The technical problem to be solved can therefore be seen as being one of improving the efficiency of the shelf panel to support the flange assembly process.

3.5 However, the support structure of D1 also requires that the panel 40 is held in a channel 24 formed by the flanges 30-35 and 31-34 (see figure 3, column 2, lines 40 to 43). This channel would already provide a kind of reservoir for receiving and adhesive for bonding the shelf panel in place.

In view of this, and also since D5 does not relate directly to the problem of fitting refrigerator shelves, the provision of a reservoir in the support flange of the assembly of D1 would only appear obvious with the benefit of hindsight.

3.6 When starting out from D9, the skilled person would have first to decide to do away with the adhesive tape and secondly come up with an alternative way of securing the shelf in an efficient manner. Since there are many ways of securing the shelf panel to the support bracket (see for example D4), the provision of a reservoir for receiving the adhesive would only appear obvious with the benefit of hindsight.

3.7 Thus, the subject-matter of claim 1 involves an inventive step.

## Order

### For these reasons it is decided that:

- 1) The decision under appeal is set aside.
- 2) The case is remitted to the examining division with the order to grant a patent in the following version:

#### Description:

pages 1, 2, 5-15 as originally filed and  
pages 3,3a, 4, 16 as filed with letter of 31 May 2021

#### Claims:

Claims 1-22, as filed with letter of 31 May 2021

#### Drawings:

Sheets 1/7-7/7 as originally filed.

The Registrar:

The Chairman:



C. Spira

C. Herberhold

Decision electronically authenticated