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**Datasheet for the decision
of 15 November 2007**

Case Number: T 0394/07 - 3.2.04

Application Number: 03729667.0

Publication Number: 1465511

IPC: A47F 3/04

Language of the proceedings: EN

Title of invention:

Dispensing apparatus with directional led lighting

Applicant:

THE COCA-COLA COMPANY

Headword:

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Relevant legal provisions:

-

Relevant legal provisions (EPC 1973):

EPC Art. 52, 56

Keyword:

"Inventive step (all requests) - no"

Decisions cited:

-

Catchword:

-



Case Number: T 0394/07 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 15 November 2007

Appellant: THE COCA-COLA COMPANY
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 16 October 2006
refusing European application No. 03729667.0
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: M. Ceyte
Members: A. de Vries
C. Heath

Summary of Facts and Submissions

I. The Appellant lodged an appeal, received 18 December 2006, against the decision of the Examining Division posted 16 October 2006, refusing the European patent application no. 03 729 667.0 and simultaneously paid the required fee. The grounds of appeal were received 26 February 2007.

The Examining Division held that the application did not meet the requirements of Articles 52(1) and 56 EPC for lack of inventive step having regard in particular to the following documents:

D1: WO-A-01 60216

D2: WO-A-01 00065

D3: US-A-5 392 953

II. Following a communication from the Board oral proceedings were duly held on 15 November 2007.

III. The Appellant requests that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request, or, in the alternative, of the auxiliary request, both filed with letter of the 15 October 2007.

IV. The wording of claim 1 of the requests is as follows:

Main Request

"A device (250, 400) for providing a plurality of products (200), comprising:
an enclosure (105) containing the products; and

a plurality of light emitting diodes (260, 410) positioned within said enclosure for illuminating one or more of the products;
characterised in that the light emitting diodes are directional and each directional light emitting diode is positioned and focussed to individually illuminate a single product, and in that the directional light emitting diodes illuminate only the products without illuminating the entire interior (130) of the enclosure."

Auxiliary Request

Claim 1 is as in the main request but for amendment of the characterizing part to read: "... the light emitting diodes are directional and **are each mounted on a mounting block, wherein the mounting blocks provide that** each ..." (emphasis added by the Board to indicate the amendment concerned).

V. The Appellant's arguments are summarized as follows:

The invention's main distinctions over the prior art - in particular that of D2 - are the use of directional light emitting diodes or LED's as well as their arrangement such that they are positioned and focused to illuminate only the products and not the background. In this way they provide a contrasting illumination of the products, highlighting them against the background. This is more effective and energy efficient vis-à-vis the prior art.

Such selective illumination is the central aspect of the invention. It is contrary to the uniform

illumination generally practised in the art, where a clear prejudice exists against non-uniform illumination.

This prejudice is borne out by D2 and D3, where lenses are used to produce a more uniform illumination across a display shelf. The lenses are used in combination with distributed, discrete light sources intended to mimic more traditional, but unwieldy fluorescent light sources. The light sources themselves are also diffuse. Consequently the skilled person would never as a matter of obviousness consider replacing them by directional LED's. Even if he were to consider the use of such LED's he would position them in a different arrangement so as to produce the desired uniform illumination: in a large number and closely spaced along the shelf.

The passage in D1 referring to the use of LED's as alternative to the diffuse lighting by fluorescent light sources prompts the skilled person to select diffuse, not directional, LED's from the wide range of ChromaCore™ LED products mentioned in D1.

Arranging the directional LED's in the claimed manner might seem obvious with knowledge of the invention and its effects, much as say placing cat's eye reflectors in the middle of the road might in retrospect seem obvious. However, such a hindsight analysis should be avoided.

The skilled person in question will be a factory floor technician or engineer involved in the design and manufacture of dispensing machines with display cases. He has no knowledge outside that limited context, in

particular not in specialist fields pertaining to display illumination.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is therefore admissible.

2. *Allowability of the Amendments*

Claim 1 (both requests) is based on originally filed claim 1 with features added from description page 5, line 14 to page 6, line 20, describing the embodiment of figures 3 and 4, and from page 7, line 25, to page 8, line 8, describing the embodiment of figure 6 as well as these figures themselves. As is clear from page 5, line 17 ("Rather ...") as well as page 7, line 28 ("Instead ...") the original application clearly considers an arrangement of *only* directional LED's that illuminate only the products and not the interior portion (page 6, lines 8 to 10), that is without further directional LED's 210, 380 used for general illumination.

Moreover, a contextual reading of in particular lines 33 to 34 of page 5 and lines 31 to 33 of page 7, show that the mounting blocks are optional and need not appear in claim 1 as in the main request.

The Board is satisfied that the subject-matter of claim 1 according to the main or auxiliary request is directly and unambiguously derivable from the original disclosure. Claim 1 of either request thus does not infringe Article 123(2) EPC.

3. *Inventive Step*

3.1 The invention concerns a device for providing products contained within an enclosure - e.g. a drinks dispenser or cooler - in which a plurality of directional LED's are positioned and focused such that each illuminates only a single product but not the interior. The result is a more effective and more energy efficient illumination of the products.

3.2 The relevant technical field is that of show cases or cabinets, more particularly that of show case illumination, as follows from the main focus of the invention as described above.

The skilled person in this field is an engineer involved in the design and development of show cases or cabinets and who has particular knowledge of show case illumination. This knowledge extends to general knowledge of suitable light sources, which, as D1 and D2 demonstrate, already includes LED's.

3.3 The pertinent prior art is disclosed in documents D1 or D2. Each of these documents concern display cases or cabinets which store and display consumer products within the case or enclosure, lit by suitable illumination. Either represents a valid starting point for the assessment of inventive step.

D1, see in particular page 7, second paragraph, suggests LED's as light source due to their increased life-time, reduced size, and higher brightness and

clarity with respect to conventional lighting such as fluorescent light.

D2, see its abstract, describes the use of discrete spaced apart light sources, which see page 8, second paragraph, may be distributed around the frame case opening or at its ends, about or under the shelves, in particular along the front or underside, to illuminate products on the shelves. The light sources may be LED's according to page 8, lines 5 to 6. Finally, see page 7, line 13 to 29, page 12, lines 28 to 30 and page 13, lines 4 and 5, a lens or pair of lenses is provided for directing light from sources along a shelf to provide a uniform illumination of the products across the shelf.

3.4 The device of claim 1 of the main request differs from that of either D1 or D2 in that LED's are *directional* and in that each is positioned and focused to "individually illuminate a single product" without the LED's illuminating the entire interior of the enclosure. D1 and D2 are silent about the particular type of LED and also do not detail their specific placement with respect to individual products.

3.5 The effect of using *directional* LED's positioned and focused to *illuminate only individual products* vis-à-vis the known use of LED's in display cases as in D1 or D2 is to selectively highlight the products within the interior, so that these are better lit and "catch the eye of the consumer" as stated on description page 1, line 18, thereby better promoting them. Selective highlighting is also inherently more economical in terms of power consumption than more general lighting: by focusing on what is of interest wastage due to

lighting items or the background which are not or less important is minimized.

Based on these effects the technical problem can be formulated as *optimizing the illumination of products with regard to the aim of promoting them, while minimizing energy consumption.*

- 3.6 The main aim and purpose of display case illumination is to better promote the products on display by making them more visible to the consumer. Further practical concerns are the usual ones of cost and efficiency, in particular regarding energy consumption. The above problem thus formulates well-known, primary aims and concerns in the relevant field of display case illumination and of which the person in this field is well aware.

The skilled person will be equally familiar with routine solutions in the field such as, for example, those commonly used in large scale shop window displays - either from his specific knowledge of display case illumination of which shop window lighting is but an example, or from the mere fact that such shop windows are so well-known. These displays commonly employ spotlights to highlight items of interest: focused beams of light are directed at the item(s) of interest, while the background, which by definition is of less interest, is diffusely lit or not at all.

- 3.7 The claimed invention, through the use of directional LED's as claimed, applies this basic idea of highlighting items of interest, to the smaller scale context of dispensing machines or coolers with display

cabinets. Directional LED's are per se commonly known, as also acknowledged by the Appellant. They are e.g. included in the ChromaCore™ range mentioned in the present application, see page 5, line 1, and in D1, page 7, line 25. The skilled person, aware of their small size and high focusing power combined with low energy consumption, and familiar with the common practice of high- or spotlighting in display cases to optimize illumination, will realize as a matter of obviousness that directional LED's are particularly suitable for that purpose in the confined space of a cooler display cabinet such as that of D1 or D2. Straightforward incorporation of the LED's to highlight items - either by supplementing or replacing the light arrangements in the cooler as in D1 or D2 - will necessarily involve appropriate positioning and focusing on individual products, and results in a device which meets the requirements of claim 1 without the exercise of inventive skills.

- 3.8 The Board is unconvinced that, as argued by the appellant, a prior art prejudice exists against non-uniform illumination which might bar such an obvious use of directional LED's in the present context.

Firstly, where D2 and D3 refer to "uniform illumination" (see page 7, line 24 to 26, of D2; and column 1, lines 43 and 44 of D3) this term, when read contextually, does not refer to an indiscriminate lighting of cabinet and contents. Rather, it refers to illumination *of the products*. This follows firstly from the frequent use of terms such as "illumination of product", "illuminating the product", "illumination of items" in D2 and D3 (see e.g. their respective

abstracts) and is entirely consistent with the main aim and purpose of display case illumination as discussed above. *Uniform* illumination refers to the aim of reducing differences *between products*, see in particular D2, page 7, line 25 to 30, relating to "uniform illumination of the product across the front of the shelf, at all levels and ... at all depths"; and D3, column 2, line 16 to 18, where introduction of the lens "reduces contrast or differences in illumination *between products*" (emphasis added).

Moreover, both documents, through their use of focusing lenses producing directional beams of light (cf. D2, page 13, lines 3 to 4; D3, column 7, lines 1 to 11) show a development *away from* diffuse lighting, in particular from that from fluorescent tubes, towards a more directional form of illumination. In D3 the lenses modulate the light from the fluorescent tubes to improve product illumination. D2 further refines this idea by removing the unwieldy tubes altogether to replace them by discrete light sources, resulting in an even less homogenous distribution of light. These documents thus demonstrate that fluorescent light is seen as not ideal, much less that they might show a preference for fluorescent light or a desire to emulate its qualities.

- 3.9 Claim 1 of the **auxiliary request** adds the further feature of mounting blocks provided for positioning and focusing each of the LED's. Some means must necessarily be provided to support the LED's such that they are properly directed towards the products. Providing a means for each LED is one of two obvious choices available to the skilled person, while realizing the

means in the form of a block represents an arbitrary choice from amongst many available types of support, which is of no inventive merit.

- 3.10 In the light of the above the Board concludes that the subject-matter of claim 1 according to either the main or auxiliary request does not involve an inventive step as required by Article 52(1) EPC in combination with Article 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

G. Magouliotis

M. Ceyte