

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF WISCONSIN

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S.C. JOHNSON & SON, INC. and  
CONSULTORIA TECNICA E  
REPRESENTACOES, LDA,

Plaintiff,

v.

THE DIAL CORPORATION,

Defendant.

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OPINION AND ORDER

07-cv-689-bbc

Plaintiff S. C. Johnson & Son, Inc. and defendant Dial Corporation compete in the home air freshener market. Plaintiff Consultoria Tecnica e Representatoes, LDA owns United States Patent No. 6,487,367, which relates to technology for multi-scent, plug-in, scented oil, home air fresheners. It has granted an exclusive license to plaintiff S.C. Johnson. Plaintiffs accuse defendant's Renuzit Tri Scents product of infringing claims 1, 3, 4, 5, 7, 13, 14, 18, 21, 22 and 28 of the '367 patent. Claim 1 is an independent claim and the remaining asserted claims depend from it. On June 5, 2008 the parties presented their positions at a claims construction hearing at which the meanings of the following six claim terms were contested: (1) heating block; (2) wick opening; (3) wick recess; (4) extending

through; (5) evaporation temperature; (6) thermal separator disposed between said wick openings for partial thermal disconnection of said heating units.

## OPINION

The well established process for claim construction begins with examination of the claims language. The language is given its ordinary meaning as it would be understood by one of ordinary skill in the relevant art, given its context and the other patent claims. Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001). This initial construction is then considered in light of the specification to determine whether the inventor expressed a different meaning for the language, whether the preferred embodiment is consistent with the initial interpretation or whether the inventor specifically disclaimed certain subject matter. Id. at 1342-43. Finally, the interpretation is examined for consistency with the patent's prosecution history and any disclaimers made therein. Id.

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### A. Heating Block: a single piece of material that

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### contains wick openings and conducts heat to them.

I conclude that the term “heating block” as used in claim 1 of the ‘367 patent means a single piece of material that contains wick openings and conducts heat to them. The

parties agree that a heating block would be understood to be a single structure that conveys heat to the wick openings. However, plaintiffs advocate a slightly broader construction, contending that a heating block is not limited to a single piece of material, but also encompasses multi-part structures. Defendant argues for a narrower construction, contending that the term includes additional limitations that the block be a single mass of ceramic, that it heat all wick openings simultaneously and that it have one flat side. I reject both plaintiffs' attempt to broaden and defendant's attempt to narrow the construction as inconsistent with the claims, specification and prosecution history.

#### 1, Heating block as permitting multiple components.

The word "block" generally implies a single piece of material. In their opening claims construction brief, plaintiffs themselves espouse a definition of the word block limited to a single piece of material: "Webster's also notes that a block may be a piece of material altered for use as 'the casting that surrounds material for an internal combustion engine'" Plts.' Opening Claim Constr. Br. at 16 (citing Webster's Third New International Dictionary, p. 235, (2002 ed.)) (emphasis added). Furthermore, plaintiffs' expert testified that in the context of a heating block, the word block is used in a manner similar to the terms engine or cylinder block, which typically refer to a single metal casting. I conclude that the patentee used the term block in this sense, as a single piece of material altered for a particular use.

Other references within the claims themselves are consistent with this definition. Claim 1 refers to openings or recesses "formed within" the block. Claim 9 describes an opening as a "bore extending through" the block. Claim 26 refers to a heating element "encapsulated" within the block. These references suggest that the block is a single piece of material altered to accommodate its purpose as a heating block. The specification and drawings disclose only a block made up of a single piece of material. In support of their preferred definition, plaintiffs note that the specification, col. 5, lines 44-50, discusses the installation of the heating element by insertion into a hole in the block. Plaintiffs argue that this proves that the heating block is a multi-component structure. Contrary to plaintiffs' assertion, these references are entirely consistent with the block itself being a single piece of material adapted to a purpose. Just as pistons and other engine components are inserted into an engine block, the heating element and thermal separator may be inserted into the heating block without becoming a component of the block itself.

Plaintiffs' concern with construing the heating block as a single piece of material apparently arises from conjecture that defendant's heating block is constructed from separate pieces of molded plastic and that defendant will argue that its block is not a single piece of material. Whether defendant's blocks contain such a structure and whether such a block would constitute a single piece of material (or equivalent), are questions beyond the scope of claims construction. However, the requirement that the heating block of the '367 patent

is a single piece of material is inescapable in light of the language of the patent and specification and plaintiffs' own evidence.

## 2. Heating block as ceramic only.

Defendant contends that the term "heating block" includes a limitation that the construction material must be ceramic because the only material disclosed in the specification is ceramic. Because that argument is contrary to the fundamental rules of patent construction, I will not accept it.

There is nothing in the claims specifying or limiting heating block materials. Although the specification provides for a ceramic block in the preferred embodiment, it also contemplates that other materials may be used. For example, the specification explains that the location of heating elements for proper heating of the block is important "especially where, in a preferred embodiment, a ceramic heating block is used." Col. 4, lines 7-9. Requiring the block to be ceramic would be an inappropriate importation of a preferred embodiment feature into the claims. Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005). Even if, as defendant suggests, ceramic was known by those of skill in the art to be the best material for heating blocks, that is no reason to read a limitation into the claims that the patentee did not include. One of ordinary skill in the art would surely know that materials other than ceramic could also be used to conduct heat.

### 3. Heating block as requiring simultaneous emission.

The claims language and specification do not support a limitation that the heating block must simultaneously heat all wick openings. In fact, the claims and specification are expressly inconsistent with such an interpretation. Claim 16, for example, includes separate switches for separate heating elements so that one wick opening may be heated and the other not. The specification explains: "Heating units 55, 56, can be actuated separately via manual switch 52, so that either the volatile substance in chamber 59 or in chamber 60 can be evaporated." Col. 8, lines 36-39. Also col. 2, lines 51-55, contemplates the option of using a single substance: "the present invention does not require multiple volatile substances to operate, and if evaporation of only one single substance is desired, it suffices to merely insert one container with a single volatile substance into the housing." Thus, the claims contemplate using the heating block to evaporate volatile substances non-simultaneously.

Although the capacity for simultaneous emission is identified as an advantage of certain claims in the patent, col. 2, lines 11-12, the specification notes only that the invention "allows for" simultaneous evaporation, not that it is required. In view of the express claims and teachings to use the heating block for non-simultaneous evaporation as well, it would be improper to include simultaneous emission as an element of the heating block.

Defendant's primary argument in favor of its proposed simultaneous evaporation limitation is based on an asserted prosecution history estoppel. Defendant argues that the '367 patentee disavowed anything but simultaneous evaporation in order to distinguish his invention from prior art, specifically, Whitby, International Publication No. WO 01/05442 A1. However, careful evaluation of the cited portion of the prosecution history reveals that the distinction was not based on simultaneous evaporation, but rather on the use of a single heating block, rather than the multiple heating blocks of Whitby. The distinction was a structural one: Whitby did not teach a single heating block with multiple wick openings. In fact, Whitby taught away from such a structure. Here is the actual argument advanced by the patentee to overcome rejection:

There is not one hint or suggestion from [Whitby] to provide a device having a heating block with two wick openings formed in the heating block. Whitby et al clearly teaches two containers, two wicks, and two separate heating blocks. There is no hint of employing a single heating block having two openings for the simultaneous heating of two wicks. In fact, Whitby teaches against the use of a single heating unit with two passages. Whitney requires the use of separate heating units [], because it is operated continuously while the other is operated periodically. . . . There simply is no teaching [] to use a single block with two openings as disclosed in the present invention.

The point of the argument was that Whitby's multiple heating block configuration necessarily required two heating elements and blocks, in part because it contemplated only differential evaporation, so it taught away from the single block invention. The patentee

could not have been distinguishing from Whitby on the basis of simultaneous evaporation because Whitby is obviously adaptable for simultaneous evaporation. The patentee was distinguishing his invention on the basis of the single block structure, not the ability to simultaneously evaporate. His argument does not disclaim use of the single heating block in conjunction with two heating elements for non-simultaneous evaporation, as expressly claimed (and allowed) in the '367 patent.

#### 4. Heating block as requiring one flat side

Defendant's argument for a flat side limitation is based primarily on the general definition of a block as a piece of wood with flat sides. However, as plaintiffs asserted and I previously concluded, the term "block" in the claims is not used in that sense, but rather in the sense of a single piece of material altered for a purpose, as in an engine block. The fact that claim 11 ("the device of claim 1 wherein said heating block is one of rectangular and oval in shape") adds limitations on the shape of the block implies that there is no such limitation inherent in the term itself. Furthermore, there is nothing about the claims that suggests that a flat side is somehow important to the invention. The preferred embodiment suggests only that the block has a "generally oval form." col. 6, line 62.

B. Wick Opening and Wick Recess: An Opening in the

Heating Block for Receiving a Wick

I conclude that both the terms “wick opening” and “wick recess” as used in claims 1 and 14 of the ‘367 patent mean an opening in the heating block for receiving a wick. The parties agree that both terms include at least an opening in the heating block. Plaintiffs contend that the patent uses the terms “opening” and “recess” interchangeably. Defendant argues that a opening means a hole through the block, and that wick recess is a broader term encompassing a hole through the block, but also including openings on the block that are not holes. Defendant’s position is supported primarily by the principle that an inventor typically uses different terms to mean different things. Although this presumption is generally sound, it is overcome by a thorough reading of the patent, which leads to the inescapable conclusion that in this instance the patentee used the terms interchangeably. Furthermore, careful consideration of the patent language reveals that the patentee definitely did not use the term opening in the narrow sense advocated by defendant.

1. Opening and recess used synonymously

The patent language consistently confirms the patentee’s intent not to differentiate between the terms recess and opening. The terms are used interchangeably throughout the claims and specification. Beginning with the claims language, claim 1 refers to wick

openings. Claim 14, which depends from claim 1, and therefore necessarily refers to the same element, refers to the same element as a wick recess. Claim 22, which depends from claim 14, refers directly to the recesses of claim 14 as “said wick openings.” The only rational way to read these three claims together is to conclude that the patentee used opening and recess interchangeably. Certainly, the claims preclude defendant’s position that although both terms are used to describe the holes depicted in figures 5 and 6, the term “wick recess” is broader, encompassing not only holes that go through the block, but those that do not, while “wick opening” is narrower, encompassing only holes through the block. “Wick opening” is used in independent claim 1, which by definition must be the broadest claim, while the term “wick recess” is used in dependent claim 14, which by definition must be narrower.

Turning to the specification, col. 7, lines 39-49, within ten lines, the patentee uses opening and recess to describe elements 4 and 5 of figures 5 and 6. At col. 3, lines 50-52, the terms are used to refer to the same thing in one sentence: “It is also possible to assign several wick openings to one heating element, so that several wick recess areas can be heated. . . .”

## 2. Wick opening not limited to holes through the block

Both the claims and specification also foreclose defendant’s position that “wick opening” encompasses only holes that pass completely through the heating block. Claim 1

refers to a wick opening. Dependent claim 9 adds as its sole additional limitation that the wick opening be "a bore extending through said heating block." If "wick opening" already meant a hole through the block, claim 9 would be meaningless. Thus, logic and the doctrine of claim differentiation preclude the construction that "wick opening" requires a hole through the block. Phillips 415 F.3d at 1315. Rather, "wick opening" means an opening in the block, but not necessarily an opening that goes all the way through the block. This conclusion is bolstered by the fact that the patentee consistently used a different more explicit term, "passage," to mean a hole through the block in claims 8, 9 and 10.

The specification confirms this conclusion: at col. 3, lines 9-10, that the "wick recess may be in the form of a passage opening or as a recess on the edge of the heating block." Finally, col. 8, line 7, of the specification refers to non-hole indentations 46 and 47 of figure 11 as "openings."

### C. Extending Through: Extending From One End to the Other

I conclude that both the term "extending through" in the phrase "having a wick end for extending through said wick opening" in claim 1, and the term "through which said wicks extend" in claim 14 mean "extending from one end to the other." Although these elements do not require that wicks extend out of the other side of the opening, the wick must extend at least the full length of the opening. Primarily, this definition is dictated by the meaning

of the word “through,” which necessarily includes extension from one end to the other of something. The term “extending through” is also used in claim 9 to describe the wick passage as a “bore extending through said heating block.” The unmistakable meaning of that phrase is a bore that extends from one end of the heating block to the other. There is no reason to believe that the patentee intended to use the identical phrase in a different sense in claim 1, particularly when it is the plain meaning of the phrase.

The word “through” is used twice in the same sense in the specification, col. 7, line 23, to describe wires passing through the heating block and at col. 8, line 18, to describe an air gap through the heating block. In both instances the term describes something (the air gap or the wires) extending from one end of the block to the other. In addition, plaintiffs’ expert testified that, from an engineering standpoint, the optimal product design would have the wick extend the full length of the opening, neither protruding from one end nor stopping short of the other end. Although it is impossible to determine with certainty, it appears that the wicks in the patent figures extend fully through the wick openings without protruding.

Plaintiffs rely on numerous references in the specification where it is noted that the wick ends extend into the wick opening: col. 1, lines 30-34; col. 2, lines 43-36; and col. 2, lines 59-61, 65. From these references, plaintiffs argue that the patentee meant “into” when he said “through” in the claims. However, this is clearly not a case of a patentee taking the unusual step of defining “through” to mean “into.” A description in the specification of a

wick being inserted into an opening is entirely consistent with a claim requirement that the wick go through the opening. A wick that goes through necessarily goes into.

**D. Evaporation Temperature: A Selected Temperature Within the Range of  
Temperatures at Which a Substance Evaporates**

I conclude that the phrase “evaporation temperature,” as used in claim 13 of the ‘367 patent, means a selected temperature within the range of temperatures at which a substance evaporates. The context of the phrase in claim 13 is "the device of claim 1 wherein said heating element includes an electrical resistance rod, wherein said resistance rod is substantially coated with a resistance value, whereby said resistance value corresponds to the evaporation temperature of said volatile substance to be evaporated." Defendant argues that the evaporation temperature should be defined as the boiling point of a substance. Plaintiffs argue that the phrase should be defined as the temperature that provides the desired evaporation rate. I agree generally with plaintiffs’ approach to the construction.

Any liquid evaporates over a wide range of temperatures, generally evaporating more quickly as more heat is added. There is no "evaporation temperature" in the sense of a single temperature at which a substance evaporates. Rather, the phrase refers to the temperature chosen by a device manufacture or the user to achieve a particular evaporation rate, which will vary by substance, application and personal preference. This is confirmed by the

specification, which notes as an advantage of the invention that "the evaporation temperature can be adjusted optimally to the composition of the volatile substance at any time with a resistance element of this type by cutting or grinding. . . ." Col. 5, lines 7-9. One of skill in the art would readily recognize that an evaporation temperature could be selected and the heating element adapted as described in claim 13.

One thing is certain. "Evaporation temperature" does not mean the boiling point of volatile oils, since heating to that temperature would likely ignite a fire, and one of the asserted advantages of this aspect of the invention is that it "reduces the flammability danger." Col. 5, line 12. Defendant's argument is based primarily upon its premise that in the absence of one objectively determinable evaporation temperature for each substance, the claim fails to satisfy the requirements of 35 U.S.C. § 112, ¶ 2. The meaning of the phrase as it would be understood by one of skill in the art is not in doubt; whether that meaning renders the claim invalid is an issue for a subsequent motion.

E. Thermal Separator Disposed Between Said Wick Openings For Partial Thermal

Disconnection of Said Heating Units: An Element Disposed Within the

Heating Block Between the Wick Openings that Reduces the Flow of Heat

Through the Block

I conclude that the phrase "thermal separator disposed between said wick openings for partial thermal disconnection of said heating units" as used in claim 22 of the '367

patent means an element disposed within the heating block between the wick openings that reduces the flow of heat through the block. The parties' proposed constructions differ from the court's in three respects. Plaintiffs would construe the element to require the thermal separator to be "a portion of the heating block." Defendants would limit the thermal separator to an air gap and would impose the same "simultaneous evaporation" limitation it sought to impose on the definition of heating block. I reject each of these proposals.

In accordance with the construction of a heating block as a single piece of material, and the related conclusion that the heating element is not a component of the block, I also conclude that the thermal separator is not a "portion of the heating block." Certainly, the only disclosed embodiment, an air gap, is not a portion of the block, but rather a passage opening through the block.

In the context of the claim 22 the "thermal separator" is "disposed between the wick openings for partial thermal disconnection" in an application in which there are separate heating elements on each side of the heating block. The preferred embodiment uses an air gap through the heating block as the thermal separator, but the choice of the broader term, "thermal separator," in the claim itself demonstrates that the claim is not limited to an air gap. This is apparent in the specification at col. 4, line 27: "the preferred separating element is an air gap." Unquestionably, the patentee understood that something other than air could be used as the separator and intentionally made the claim broad enough to

encompass other elements. Those of ordinary skill would know of other heat insulating materials that could be disposed in the air gap of the preferred embodiment to increase thermal disconnection.

Defendant's proposed "ensure simultaneous evaporation" limitation is rejected for all of the reasons it was not included as a limitation in the term "heating block." The additional limitation is particularly inappropriate in claim 22 because the preferred embodiment of claim 22 expressly contemplates heating only one wick opening at a time when practicing this claim. Col. 8, lines 36-38. One obvious purpose of the separator is to facilitate the separate heating of the two wick openings for non-simultaneous evaporation.

#### ORDER

IT IS ORDERED that the disputed claim terms of U.S. Patent No. 6,487,367 are construed as follows:

- "Heating block" means "a single piece of material that contains wick openings and conducts heat to them."
- "Wick opening" and "wick recess" both mean "an opening in the heating block for receiving a wick."
- "Extending through" and "through which said wicks extend" mean "extending from one end to the other."
- "Evaporation temperature" means "a selected temperature within the range

of temperatures at which a substance evaporates.”

- “Thermal separator disposed between said wick openings for partial thermal disconnection of said heating units” means “an element disposed within the heating block between the wick openings that reduces the flow of heat through the block.”

Entered this 18<sup>th</sup> day of June, 2008.

BY THE COURT:

/s/

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BARBARA B. CRABB  
District Judge