

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte VALDIMIR GARTSTEIN, FAIZ FEISAL SHERMAN,
YING XU, MILAN MARCEL JEVTITCH
and DONALD CARROLL ROE

Appeal No. 2005-1117
Application 10/078,043

ON BRIEF

Before KIMLIN, WARREN and DELMENDO, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

Decision on Appeal

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner finally rejecting claims 1 through 7 and 9 through 13, and refusing to allow claim 8 as amended subsequent to the final rejection, which are all of the claims in the application.¹

Claims 1, 10 and 11 illustrate appellants' invention of an apparatus and a method for treating pathogen-based infections in a living organism, including acute otitis media in an animal, and are representative of the claims on appeal:

1. An apparatus for meaningful suppression of the growth potential of a pathogen *in-vivo*, said apparatus comprising an electromagnetic radiation source capable of providing broad-spectrum electromagnetic radiation, wherein said broad-spectrum electromagnetic radiation

¹ Claims 14 through 20 also finally rejected were subsequently canceled.

includes wavelengths of from about 190 nm to about 1200 nm, said broad-spectrum electromagnetic radiation having an intensity sufficient to achieve meaningful suppression in said growth potential of said pathogen *in-vivo* and wherein at least part of said apparatus is adapted for placement proximate to the *in-vivo* location of said pathogen, wherein said *in-vivo* location of said pathogen is a plant or plant parts thereof.

10. A method for achieving the meaningful suppression of the growth potential of a pathogen in a living organism comprising applying a broad-spectrum electromagnetic radiation from an apparatus according to Claim 11 to said living organism at the locus of said pathogen in said living organism.

11. An apparatus for treatment of acute otitis media in an animal comprising an electromagnetic radiation source capable of providing broad-spectrum electromagnetic radiation, wherein said broad-spectrum electromagnetic radiation has wavelengths of from about 190 nm to about 1200 nm, said broad-spectrum electromagnetic radiation having an intensity sufficient to achieve meaningful suppression in acute otitis media while minimizing erythema on the tympanic membrane of said animal; wherein at least part of said apparatus is adapted for placement proximate to said tympanic membrane of said animal.

The references relied on by the examiner are:

Talmore et al. (Talmore)	5,344,433	Sep. 6, 1994
Eckhouse	5,720,772	Feb. 24, 1998

The examiner has rejected appealed claims 1 through 13 under 35 U.S.C. § 102(b) as anticipated by Eckhouse, and appealed claim 10 under 35 U.S.C. § 103(a) as being unpatentable over Eckhouse in view of Talmore.²

Appellants state that the appealed claims “stand or fall together” but argue the patentability of claims 1, 10 and 11 (brief, e.g., pages 2, 3, 4 and 7). Thus, we decide this appeal based on appealed claims 1 and 11 as representative of the first ground of rejection, and on appealed claim 10 with respect to the second ground of rejection. 37 CFR § 1.192(c)(7) (2003); *see also* 37 CFR § 41.37(c)(1)(vii) (effective September 13, 2004; 69 Fed. Reg. 49960 (August 12, 2004); 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)).

We affirm.

Rather than reiterate the respective positions advanced by the examiner and appellants, we refer to the answer and to the brief for a complete exposition thereof.

Opinion

² The examiner states in the answer (page 3) that the grounds of rejection are stated in the Office action mailed December 30, 2003 (*see* pages 2-4).

We have carefully reviewed the record on this appeal and based thereon find ourselves in agreement with the supported finding advanced by the examiner that as a matter of fact, *prima facie*, appealed claims 1 and 11 are anticipated by Eckhouse. In view of the established *prima facie* case of anticipation, we again consider the record as a whole with respect to this ground of rejection in light of appellants' rebuttal arguments in the brief. *See generally, In re Spada*, 911 F.2d 705, 707 n.3, 15 USPQ2d 1655, 1657 n.3. (Fed. Cir. 1990).

Appellants submit that the requirement of claim 1 that "at least part of said apparatus is adapted for placement proximate to the *in-vivo* location of said pathogen, wherein said *in-vivo* location of said pathogen is a plant or plant parts" is a functional limitation that must be considered as limiting the structure of the claimed apparatus (brief, page 3). Appellants contend that "[b]ecause the apparatus is adapted for placement *in-vivo* of a plant or proximate thereto, there are structural attributes provided to the apparatus that one skilled in the art would recognize" (*id.*). Thus, appellants argue that because Eckhouse is silent with respect to the use of the device disclosed therein to treat a plant, it fails to teach every element of claim 1 (*id.*, page 4).

In similar manner, appellants submit that claim 11 requires that "at least part of said apparatus is adapted for placement proximate to said tympanic membrane of said animal" is a functional limitation that limits the structure of the claimed apparatus, contending that "[b]ecause the apparatus is adapted for placement proximate to said tympanic membrane, there are structural attributes provided to the apparatus that one skilled in the art would recognize" (*id.*, pages 4-5). Appellants further point out that the language of claim 11 "implies that the tympanic membrane is subjected to electromagnetic radiation of an intensity" such "that erythema on the tympanic membrane is minimized," and thus, the claimed "apparatus is attributed with structural limitations which allow the tympanic membrane to be exposed to electromagnetic radiation of some intensity" (*id.*, page 5). Appellants thus argue that because Eckhouse is silent as to the use of the device disclosed therein to treat the tympanic membrane, it fails to teach every element of claim 11 (*id.*, page 5).

In these respects, appellants contend "that the device in [Eckhouse] is not inherently capable of being located in proximity to a tympanic membrane," arguing that more than a probability or possibility of such use must be shown to establish inherency, citing *In re*

Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950 (Fed. Cir. 1999), and *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991) (brief, pages 5-6). Appellants point out that Eckhouse teaches the use of electromagnetic radiation for the treatment of skin disorders and for several invasive procedures, but not the treatment of acute otitis media or treatment proximate to the tympanic membrane, and argue that the reference thus does not inherently teach all of the elements of claim 11 (*id.*, pages 6-7).

In response, the examiner submits that while a functional limitation must be considered, “there is nothing in the [subject limitation of claim 1] which implies any structure beyond a delivery member which may be located near a plant,” arguing that “the Eckhouse delivery member, which is located near skin, may inherently be located adjacent a plant” and pointing to col. 8, ll. 46-55, of Eckhouse where “a lightweight delivery unit held in the desired location by the physician” is taught (answer, pages 3-4). The examiner argues that “[s]uch a hand-held unit is clearly capable of being located adjacent skin tissue, an ear (including the tympanic membrane) or a plant” (*id.*, page 4). The examiner points out that appellants have “failed to establish why the Eckhouse device is structurally incapable of being placed proximate a plant or parts thereof” (*id.*).

With respect to claim 11, the examiner submits that “the handheld probe of Eckhouse, which is placed at various locations on the skin to treat reasonably small areas, is inherently capable of being located in proximity to a patient’s ear (i.e., in proximity to a tympanic membrane),” and that the “claims fail to set forth any distinguishing features or elements which would require the device to be located at a position (e.g., within the inner ear) not reachable by any well-known hand held probe such as taught by Eckhouse” (*id.*). The examiner further submits that while Eckhouse does not disclose treating acute otitis media or a device proximate to the tympanic membrane, the reference teaches a device that “includes a light source which provides the exact same wavelength and energy ranges for treating tissue” and “is inherently capable of being located adjacent an ear and, therefore, in proximity to a tympanic membrane” (*id.*, pages 4-5). The examiner points out that appellants have “failed to establish why the Eckhouse device would be incapable of being located in proximity to a tympanic membrane of an animal” (*id.*, page 5).

We first interpret representative independent claims 1 and 11 by giving the terms thereof the broadest reasonable interpretation in light of the written description in appellants' specification, including the drawings, as it would be interpreted by one of ordinary skill in this art, without reading into these claims any limitation or particular embodiment disclosed in the specification. *See In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). These claims contain functional language in the preamble and in the body thereof in order to define certain structure of the claimed apparatus, *see generally, Corning Glass Works v. Sumitomo Elect. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989); *In re Stencel*, 828 F.2d 751, 754-55, 4 USPQ2d 1071, 1073 (Fed. Cir. 1987); *In re Echerd*, 471 F.2d 632, 634-35, 176 USPQ 321, 322 (CCPA 1973); *In re Ludtke*, 441 F.2d 660, 663-64, 169 USPQ 563, 565-67 (CCPA 1971); *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971), and thus, this language must be given its broadest reasonable interpretation in this respect in light of the written description in the specification. *See Morris, supra; Zletz, supra; Stencel, supra.*

Claim 1 specifies that the claimed apparatus must perform the function of meaningfully suppressing the growth potential of any pathogen *in-vivo* and comprises at least (1) any source of broad-spectrum electromagnetic radiation in wavelength falling within the stated range at an intensity sufficient for performing said function, and (2) any structure which permits "placement" of at least any part of the apparatus "proximate to the *in-vivo* location of said pathogen" in and on any "plant or plant parts" in order to perform the function thereon. We interpret the term "pathogen" to have its ordinary meaning of any agent that causes disease,³ and indeed, appellants disclose that "the term 'pathogen' includes biological substances capable of proliferating that causes a disease in an organism" (specification, page 7, ll. 16-25). The preambular language does not specify an organism which is the *in-vivo* location of the pathogen, but it is clear from the last clause of claim 1 that the organism is any plant or parts thereof.

³ *See generally, The American Heritage Dictionary, Second College Edition* 910 (Boston, Houghton Mifflin Company, 1982); *Webster's II New Riverside University Dictionary* 861 (Boston, The Riverside Publishing Company, 1984).

Appellants define “the term ‘proximate’ [to mean] . . . some position that is in close physical proximity, to the locus of the pathogen in the organism” (*id.*, page 8, ll. 11-15). The ordinary dictionary meaning of “proximate” is “[c]losely related in space, time or order; very near,” while that of “proximity” is “[t]he state, quality, or fact of being near or next; closeness.”⁴ While appellants use the phrase “pathogen in the organism” in their definition of “proximate,” we find that they define “the term *in-vivo* [to mean] . . . in the interior or inside of a living organism . . . or on the exterior or outside of a living organism” (*id.*, page 7, ll. 13-15). Thus, the *in-vivo* location of the pathogen in claim 1 can be in the interior and/or on the exterior of the plant or plant part. Therefore, we agree with the examiner’s interpretation that the structure of the claimed apparatus encompassed by claim 1 is any structure which places any part of the apparatus “proximate,” that is, “near,” the *in-vivo* location of the pathogen in or on any plant or part thereof so that it can perform the specified function, and with appellants’ argument that one skilled in the art would recognize such structure.

Claim 11 specifies that the claimed apparatus must perform the function of treating acute otitis media in any animal and comprises at least (1) any source of broad-spectrum electromagnetic radiation in wavelength falling within the stated range at an intensity sufficient to “achieve meaningful suppression in acute otitis media” while minimizing erythema on the tympanic membrane of said animal,” and (2) any structure which permits “placement” of at least any part of the apparatus “proximate to said tympanic membrane of said animal.” Appellants disclose that “acute otitis media” is a form of “inner ear infections” in any mammal, but do not identify a pathogen (specification, page 20, ll. 26-27). We note that “acute otitis media” is generally defined as an infection involving the middle ear indicated by the presence of fluid therein and can have the symptom, among others, of an inflamed tympanic membrane. *See generally, Stedman’s Medical Dictionary* 1006.⁵ The electromagnetic radiation must strike the

⁴ *See generally, The American Heritage Dictionary, Second College Edition* 998; *Webster’s II New Riverside University Dictionary* 948.

⁵ 24th ed., Baltimore, Waverly Press, Inc. 1982.

tympanic membrane via the external acoustic meatus, and the intensity thereof must be such that erythema⁶ of the tympanic membrane is minimized.

We found above that appellants have defined the term “proximate” to mean placement of the apparatus “near” the locus of the pathogen in the organism. With respect to claim 11, appellants disclose that with respect to “pathogens in the inner ear, placement proximate would mean insertion into the ear in reasonable proximity to the pathogen in the inner ear, such as near the tympanic membrane,” and disclose in specification Example 1 an apparatus that “contains a tip or speculum for facilitating the application of the pulsed broad-spectrum electromagnetic radiation, in this case pathogens located in the ear” (specification, page 8, ll. 12-15, and page 23, ll. 3-5; *see also* page 20, ll. 18-21 and 24-27). We determine that the broadest reasonable interpretation of the language of claim 11 in light of the specification is that the claimed apparatus has the structure such that the source of broad-spectrum electromagnetic radiation is focused on the tympanic membrane via the external acoustic meatus or auditory canal from any position next to the auricle or external ear to a position within the external acoustic meatus or auditory canal, that is, near the tympanic membrane, with respect to the ear of any animal. We find no basis in either the language of claim 11 or in the written description of the specification upon which to read into claim 11 the limitation of the structure of the apparatus of specification Example 1. *See Morris, supra; Zletz, supra.* Thus, we agree with appellants’ argument that one skilled in this art would recognize structures that expose the tympanic membrane to electromagnetic radiation of suitable intensity.

Turning now to Eckhouse, appellants do not dispute the examiner’s finding that the reference discloses a broad-spectrum electromagnetic radiation range that falls within and thus anticipates the claimed range with respect to claims 1 and 11. Thus, the issue centers on whether at least a part of the Eckhouse apparatus is inherently capable of placement proximate the *in-vivo* location of a pathogen to focus electromagnetic radiation on that location in and on any plant or plant part and on the tympanic membrane of any animal.

The examiner finds, and we agree, that Eckhouse discloses a handheld flash lamp, which

⁶ The term “erythema” is generally defined as an “[i]nflammatory redness of the skin.” *See generally, Stedman’s Medical Dictionary* 484.

we find can have the structure of Eckhouse **FIG. 2** that includes iris **20** and other components which “control the spectrum and the size of the exposed area,” with respect to the therapeutic electromagnetic treatment of external skin disorders and certain disorders under the skin, as well as certain invasive procedures (e.g., col. 5, l. 26, to col. 8, l. 62). We find that the exposure area provided by such apparatus can be circular as well as rectangular and of different dimensions, and can include an exposure area of small dimension, such as to treat warts which are well known to be caused by viruses (e.g., col. 6, ll. 11-34, col. 8, ll. 22-23, and col. 18, l. 22). We further find that Eckhouse discloses coupling the broad-spectrum electromagnetic radiation to a light guide, in order to couple the light to the treatment area, wherein the light guide may be circular or rectangular to match the shape of the area to be treated (e.g., col. 8, l. 62, to col. 11, l. 59).

It is well settled that in order for the examiner to establish a *prima facie* case of anticipation, each and every element of the claimed invention, arranged as required by the claim, must be found in a single prior art reference, either expressly or under the principles of inherency. *See generally, In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997); *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 677-78, 7 USPQ 1315, 1317 (Fed. Cir. 1988); *Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick*, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984). Here, with respect to claim 1, we find as a matter of fact, that one skilled in the art can place at least iris **20** of the handheld flashlamp of Eckhouse proximate the *in-vivo* location of the pathogen on and in the plant or plant part in the same manner as a physician would place this part of the flashlamp proximate the skin of a patient, adjusting the exposure area, electromagnetic radiation and intensity within the area and ranges taught by the reference. Thus, we agree with the examiner that the flashlamp apparatus disclosed by Eckhouse inherently satisfies each and every element of the claimed apparatus encompassed by claim 1, arranged as required by that claim, and that, therefore, the burden rests with appellants to establish that the handheld flashlamp of Eckhouse is inherently incapable of performing the function of meaningfully suppressing the growth potential of any pathogen *in-vivo* specified in the claim. *See Schreiber*, 128 F.3d at 1478, 44 USPQ2d at 1432.

With respect to claim 11, we find as a matter of fact, that one skilled in the art can place

at least iris **20** of the handheld flashlamp of Eckhouse proximate the tympanic membrane of an animal affected by acute otitis media, because the exposure area can be adjusted by iris **20** for the size of the external acoustic meatus or auditory canal and the tympanic membrane when this part of the flashlamp is located at the auricle or external ear of an animal, and the electromagnetic radiation and intensity can be adjusted within the ranges taught by the reference. Indeed, there is no limitation on the size of the subject ear or any features thereof as it can be of any animal, ear dimensions of the auricle or external ear and the external acoustic meatus or auditory canal varying even within the same species. Thus, we agree with the examiner that the flashlamp apparatus disclosed by Eckhouse inherently satisfies each and every element of the claimed apparatus encompassed by claim 11, arranged as required by that claim. Therefore, the burden rests with appellants to establish that the handheld flashlamp of Eckhouse is inherently incapable of performing the function of treating acute otitis media in any animal as specified in the claim. *See Schreiber*, 128 F.3d at 1478, 44 USPQ2d at 1432..

As the examiner points out, appellants have not carried the burden of establishing that the at least a part of the handheld flashlamp of Eckhouse is incapable of placement proximate to the *in-vivo* location of the pathogen in any plant or part thereof, or that at least a part of the flashlamp is incapable of placement proximate to the tympanic membrane of any animal, and thus incapable of performing the function specified in the claims. We find no evidence supporting appellants' contentions elsewhere in the record. *See generally, In re Glass*, 474 F.2d 1015, 1019, 176 USPQ 529, 532 (CCPA 1973); *Ludtke*, 441 F.2d at 663-64, 169 USPQ at 565-67. Furthermore, we are not convinced by appellants' argument that Eckhouse does not serve as an anticipation because the reference is silent with respect to the use of the handheld flashlamp to treat pathogens *in-vivo* in plants and plant parts, and acute otitis media in animals. Indeed, on this record, appellants have merely identified a new intended function of treating living pathogens *in-vivo* in organisms for the handheld flashlamps of Eckhouse disclosed to perform the function of treating a living organism with broad-spectrum electromagnetic radiation for other purposes, which does not make Eckhouse's handheld flashlamps again patentable. *See generally, Schreiber*, 128 F.3d at 1477, 44 USPQ2d at 1431.

Accordingly, we have again considered the totality of the record before us, weighing all

of the evidence of anticipation found in Eckhouse with appellants' countervailing arguments for non-anticipation in the brief, and based thereon, conclude that the claimed invention encompassed by appealed claims 1 through 13 would have been anticipated as a matter of fact under § 102(b).

Our review of the record on this appeal further leads us to agree with the supported position advanced by the examiner that, *prima facie*, the claimed method for achieving the meaningful suppression of the growth potential of a pathogen in a living organism encompassed by appealed claim 10 would have been obvious over the combined teachings of Eckhouse and Talmore to one of ordinary skill in this art at the time the claimed invention was made. In view of the established *prima facie* case of obviousness, we again consider the record as a whole with respect to this ground of rejection in light of appellants' rebuttal arguments in the brief. *See generally, In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

We determine that in giving the language thereof the broadest reasonable interpretation in light of the specification, claim 10 specifies a method comprising at least "applying a broad-spectrum electromagnetic radiation from an apparatus according to Claim 11" to the locus of any pathogen in any organism to achieve meaningful suppression of the growth potential of that pathogen. Thus, the apparatus to be employed in the claimed method is defined in claim 11 which we have interpreted above. *See Morris, supra; Zletz, supra.*

Appellants submit that Eckhouse does not disclose the apparatus and that Talmore "fails to teach or suggest the claim limitations which distinguish the claimed invention of claim 11 over" Eckhouse (brief, page 7). Appellants admit that Talmore "may teach some of the claim limitations that [Eckhouse] is lacking, i.e., the treatment of pathogens and fungi" (*id.*). The examiner responds that "Talmore was cited as a teaching of specifically treating skin pathogens with light energy," with the combined teachings suggesting that Eckhouse's apparatus would "inherently treat any pathogens located on the tissue" (answer, pages 6-7).

We find no argument by appellants with respect to claim 10 which further addresses whether Eckhouse's handheld flashlight satisfies all of the limitations of claim 11, and thus, on this record, we are in agreement with the examiner's position in the here considered ground of rejection. We are reinforced in our view by our finding above of the disclosure of the treatment

of warts in Eckhouse which, on this record, would reasonably appear to involve the meaningful suppression of the growth potential of the causal virus at its locus on and in the living organism, and thus the claimed method encompassed by appealed claims 10 reasonably appears to be identical to the method of treating warts in Eckhouse. *See generally, In re Baxter Travenol Labs.*, 952 F.2d 388, 391, 21 USPQ2d 1281, 1284-85 (Fed Cir. 1991) (citing *In re Fracalossi*, 681 F.2d 792, 794, 215 USPQ 569, 571 (CCPA 1982) (“anticipation is the ultimate of obviousness”); *see also Spada*, 911 F.2d at 708-09, 15 USPQ2d at 1657-58 (“The Board held that the compositions claimed by Spada ‘appear to be identical’ to those described by Smith. While Spada criticizes the usage of the word ‘appear,’ we think that it was reasonable for the PTO to infer that the polymerization by both Smith and Spada of identical monomers, employing the same or similar polymerization techniques, would produce polymers having the identical composition.”).

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Eckhouse and Talmore with appellants’ countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claim 10 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The examiner’s decision is affirmed.

Appeal No. 2005-1117
Application 10/078,043

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv) (effective September 13, 2004; 69 Fed. Reg. 49960 (August 12, 2004); 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)).

AFFIRMED

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
)	
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CHARLES F. WARREN)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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