

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 28

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte ROBERT J. WOOD,  
LORAND ERNYEY, and JOHN HARKINS

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Appeal No. 2004-0024  
Application No. 09/249,922

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ON BRIEF<sup>1</sup>

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Before BARRETT, RUGGIERO, and LEVY, Administrative Patent Judges.  
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-4, which are all of the claims pending in this application.

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<sup>1</sup> The Oral Hearing scheduled for May 6, 2004 has been waived by appellants in a communication received, via facsimile on March 16, 2004.

BACKGROUND

Appellants' invention relates to a flashlight equipped with a low wattage arc lamp. The flashlight produces a concentrated beam of light that can penetrate dense smoke or fog (page 1). The fill gased uses to dope the lamp (primarily mercury and indium) function to produce a color temperature in excess of 5000° Kelvin (page 3). An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced as follows:

1. A hand-held flashlight comprising:

a metal halide arc lamp wherein the lamp produces a point source of light, said lamp producing a white light capable of penetrating dense smoke and fog;

a reflector containing said arc lamp and providing a collimated beam of high intensity white light; and,

circuit means for providing a high starting voltage to the lamp and a lower operating voltage after sustaining said lamp, said circuit means including a battery, a ballast, and a microprocessor for monitoring said lamp and said batter, said microprocessor providing a discernible output signal indicative of the lamp on-time and battery voltage, said microprocessor controlling the application of the starting voltage from said ballast to said lamp to prevent misstarting of the lamp.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Cockram	4,914,356	Apr. 3, 1990
Graham et al.	5,144,201	Sep. 1, 1992

(Graham)  
Gaus 5,604,406 Feb. 18, 1997

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Gaus in view of Cockram.

Claims 2-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gaus in view of Cockram and further in view of Graham.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellants regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 21, mailed December 3, 2002) for the examiner's complete reasoning in support of the rejections, and to appellants' brief (Paper No. 20, filed September 19, 2002, reply brief (Paper No. 23, filed February 3, 2003) and the Declaration of Mr. Robert J. Wood under 37 CFR §1.132 for appellants' arguments thereagainst. Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered. See 37 CFR 1.192(a).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellants' arguments set forth in the briefs and Declaration, along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

Upon consideration of the record before us, we affirm-in-part. We begin with the rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Gaus in view of Cockram. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally

available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole. See id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

The examiner's position (answer, page 3) is that Gaus discloses providing a collimated beam of high intensity white light, but that Gaus doesn't show or teach a microprocessor. To make up for this deficiency of Gaus, the examiner turns to Cockram for a teaching of a microprocessor for monitoring an arc lamp. The examiner asserts (id.) that it would have been obvious

to replace the ignition control of Gaus with a microprocessor because the microprocessor operates according to a program stored in memory and can be tailored to suit the application. The examiner further asserts (answer, page 5) that metal halide lamps are capable of producing white light and that white light is inherently capable of penetrating a dense fog.

Appellants assert (brief, page 4) that the lamps of Gaus and Cockram have completely different operating characteristics, and questions why an artisan looking to improve a metal halide lamp would look to a gas discharge lamp. Appellants (id.) note that Gaus was filed five years after Cockram was published, and assert that if a microprocessor was equivalent to the control circuitry of Gaus, that Gaus would have at least mentioned that a microprocessor could be substituted for the control circuitry. It is further argued (brief, page 5) that the claimed flashlight must produce white light capable of penetrating dense smoke and fog, and that this element is not disclosed in either reference. Appellants contend (id.) that the examiner's assertion of inherency is unsubstantiated in the prior art.

Before addressing the examiner's rejections based upon prior art, it is an essential prerequisite that the claimed subject matter be fully understood. Analysis of whether a claim is

patentable over the prior art under 35 U.S.C. § 103 begins with a determination of the scope of the claim. The properly interpreted claim must then be compared with the prior art. Claim interpretation must begin with the language of the claim itself. See Smithkline Diagnostics, Inc. v. Helena Laboratories Corp., 859 F.2d 878, 882, 8 USPQ2d 1468, 1472 (Fed. Cir. 1988). What we are dealing with in this case is the construction of the limitations recited in the appealed claims. As stated by the court in In re Hiniker Co., 150 F.3d 1362, 1369, 47 USPQ2d 1523, 1529 (Fed. Cir. 1998) "[t]he name of the game is the claim." Claims will be given their broadest reasonable interpretation consistent with the specification, and limitations appearing in the specification are not to be read into the claims. In re Etter, 756 F.2d 852, 858, 225 USPQ 1, 5 (Fed. Cir. 1985). Accordingly, we will initially direct our attention to appellants' claim 1 to derive an understanding of the scope and content thereof. We note at the outset that, as shown in figures 1 and 3 of Gaus, metal halide bulb 11 provides a point source of light, and, as shown in the solid and dotted lines of figure 1, the focal point of the light can be adjusted from being focused at a spot to being dispersed. Upon adjusting the light between being focused on a spot and being dispersed, the beam will

project in a collimated manner from lens 16, due to the adjustment of reflector 15.

In addition, we find that the claim language "a metal halide arc lamp wherein the lamp produces a point source of light, said lamp producing a white light capable of penetrating dense smoke and fog" requires a white light. However, we find no explicit definition of white light in the record, and take Notice<sup>2</sup> that the ordinary and customary meaning of white light is "any radiation producing the same color sensation as average noon sunlight." Although the Declaration of Mr. Wood (page 3) sets forth that the light produced by an ARC light is perceived by the human eye as being "whiter light" than the light of a halogen lamp, we find nothing in the record that would preclude the phrase "white light" from reading on any conventional light, such as the metal halide lamp of Gaus. In addition, although the claim requires that the white light produced by the lamp is capable of penetrating dense smoke and fog, the claim is silent as to how much penetration of dense smoke and fog is required to meet the claim. Although the Declaration of Mr. Woods states (page 2) that in the test of the lamp, that a fireman's high

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<sup>2</sup> Mc-Graw Hill Dictionary of Scientific and Technical Terms, Fifth Edition, © 1994 Mc-Graw Hill, Inc. Page 2165; a copy of which is attached to the Decision.

intensity lamp penetrated less than one foot, whereas appellants' lamp penetrated about 15 feet, we find that as broadly claimed, any penetration of the dense fog and smoke, even an inch, is sufficient to meet the claim language that the white light produced by the lamp penetrated dense smoke and fog. If appellants wanted the penetration of dense smoke and fog to distinguish over the prior art, then appellants should have included language in claim 1 as to the amount of penetration produced by the white light. We decline to read into claims limitations not found therein.

From all of the above, we find that Gaus meets the claimed metal halide arc lamp wherein the lamp produces a point source of light, said lamp producing a white light capable of penetrating dense fog and smoke.

Turning to the issue of whether an artisan would have considered it obvious to have replaced the ignition control of Gaus with the microprocessor of Cockram, we find that Cockram relates to a controller for gas discharge lamps, such as, e.g. mercury vapor lamps or High Intensity Discharge (HID) lamps (col. 1, lines 8-12). Cockram discloses that the controller drives a HID lamp 18 (col. 3, lines 51-52). Microprocessor 112 operates according to a program stored in memory 124 (col. 7, lines 32 and

33). By using a specially programmed microprocessor, the voltage and current supply to the lamp can be controlled in many steps between turn on and normal running conditions (col. 7, lines 4-9). In addition, the controller can also measure lamp light output, its color temperature, and its actual temperature (col. 7, lines 39-45).

Gaus is directed to a metal halide arc discharge lamp (col. 1, lines 6 and 7). As stated by the examiner (answer, page 5) gas discharge and metal halide lamps are known in the art as high intensity discharge lamps. Although Gaus does not disclose the metal halide arc discharge lamp to be a HID, we take Notice<sup>3</sup> that high-intensity discharge (HID) is a term denoting a general group of lamps consisting of mercury, metal halide and high-pressure sodium lamps. A mercury lamp is an electric discharge lamp. Metal halide lamps are very similar in construction to the mercury lamps, the major difference being the addition of a metal halide in the arc tube. Because the metal halide lamp of Gaus and the gas discharge lamp of Cockram are both HIDs and are very similar in construction, we consider the references to be of analogous art, and find that an artisan would have been motivated

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<sup>3</sup> Standard Handbook for Electrical Engineers, ©1993 McGraw-Hill, Inc., Chapter 26, pps 31-36; a copy of which is attached to the Decision.

to use the microprocessor controller from one type of HID in place of the ignition controller for a different type of HID of similar construction. Thus, we agree with the examiner that an artisan would have been motivated to replace the ignition controller of Gaus with the microprocessor controller of Cockram.

We are not persuaded by appellants' assertion, (brief, page 4) that "[i]f such a combination were truly obvious, it would have been done before." Appellants' argument blurs the distinction between 35 U.S.C. § 102 and 35 U.S.C. § 103. Appellants are in effect arguing that if the invention were obvious, it would have been done before, i.e., anticipated by the prior art. It does not follow that if an invention is not anticipated, that it is therefore not obvious. It cannot be concluded that 35 U.S.C. § 103 adds nothing to Section 102. See Tokyo Shibaura Electric Co., Ltd., et al. v. Zenith Radio Corporation, 548 F.2d 88, 89, 193 USPQ 73, 74 (3rd Cir. 1977).

Nor are we persuaded by appellants' assertion (brief, page 4) that "[i]f indeed a microprocessor would be equivalent to the control circuitry, one would think that Gaus, filed five years after Cockram was published, would have at least mentioned that a microprocessor could be substituted for the control circuitry

used if that were indeed the case," because there is no evidence of record that Gaus was aware of Cockram's invention.

Nor are we persuaded by appellants' assertion (reply brief, page 7) that "Gaus specifically criticizes, and thus teaches away from, the use of multi-component electronic control of metal halide bulbs: 'In the past, the operation of metal halide bulbs was electronically controlled with current control circuitry...Unfortunately, the current control circuitry is very bulky, includes a high number of components, and is expensive...To be commercially viable, the control and ignition systems of the lamp must be relatively inexpensive.' Gaus, col. 2, lines 40-41; 48-50; 56-58." As stated by our reviewing court in In re Gurley, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994):

A reference may be said to teach away when a person of ordinary skill, upon [examining] the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.

The fact the current control circuitry used in the prior art was bulky, expensive, and required a high number of components neither refers to a microprocessor controller nor teaches away from the use of a microprocessor controller.

From all of the above, we are not convinced of any error on the part of the examiner in the rejection of claim 1, and find that the evidence provided by appellants to be insufficient, on balance, to overcome the strength of the prima facie case of obviousness of claim 1. Accordingly, the rejection of claim 1 under 35 U.S.C. § 103(a) is affirmed.

We turn next to claims 2-4, as being unpatentable over Gaus in view of Cockram and further in view of Graham. As noted by the examiner, Graham teaches the lamps operative range of 8-22 watts, and an arc gap of between 0.7-1.4mm. With regard to the claimed color temperature at or above 5000°K, the examiner acknowledges that this is not shown by the references, but asserts (answer, page 4) that the claimed color temperature would have been obvious from Graham's teaching that the percentage of weight of the additives (metal halides) is important in optimizing efficiency and controlling color temperature. The examiner adds (answer, page 5) that "in the absence of unexpected or unobvious results, the specific color temperature at 5000° degree Kelvin is considered a design choice."

Appellants assert (brief, page 5) that Graham discloses a color temperature of 3,800° Kelvin, and argues that Graham cannot be cited for any color temperature, but only for the color

temperatures disclosed. It is further argued (reply brief, page 11) that the examiner has improperly combined the teachings of Gaus, Cockram and Graham using hindsight.

From our review of Graham, we find that Graham discloses (col. 1, lines 34-37) that halide condensation, particularly in lower wattage lamps, can significantly reduce efficacy and increase color temperature to unacceptable levels. We further find that in all three tables provide, that Graham only discloses the color temperature to be 3,800° Kelvin. We agree with the examiner (answer, page 4) that Graham discloses (col. 6, lines 53-57) that "[i]t has been determined that in using the metal halides, sodium iodide and scandium tri-iodide, the percentage by weight of these additives is important in optimizing efficacy and controlling color temperature of the lamp." From this disclosure of Graham, we find that the mixture of the additives to be a result effective variable. This accords with the general rule that discovery of an optimum value of a result effective variable (in this case, the optimum color temperature) is ordinarily within the skill of the art. See In re Boesch, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980) and In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). As stated in In re Huang, 100 F.3d 135, 139, 40 USPQ2d 1685, 1688 (Fed. Cir. 1996):

This court and its predecessors have long held, however, that even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification

was within the capabilities of one skilled in the art, unless the claimed ranges "produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art."

Additionally, as stated in In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990):

The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . These cases have consistently held that in such a situation, the applicant must show that the particular range is *critical*, generally by showing that the claimed range achieves unexpected results relative to the prior art range [citations omitted].

In the present case, we find from the Declaration of Mr. Wood (page 3) that "we now believe that the high color temperature at or above 5000 degree Kelvin is responsible for some of these unexpected results as well. . . . The higher color temperatures combined with the use of the arc lamp allows a tighter light beam to penetrate further and be seen better than was possible with the prior art." From this evidence, we find that the particular limitation of at or above 5000° Kelvin is *critical*, and with the ARC lamp, achieves unexpected results relative to the prior art disclosure of 3,800° Kelvin color

temperature. Considering all of the evidence before us, we find that it would not have been obvious to an artisan to use a color temperature at or above 5000° Kelvin, as recited in claims 2 and 4.

Accordingly, the examiner's rejection of claims 2 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Gaus in view of Cockram and further in view of Graham is reversed.

Claim 3 depends from claim 1 and has not been separately argued by appellants. We observe that claim 3 does not recite that the color temperature is at or above 5000° Kelvin. From the lack of any specific arguments by appellants, and the disclosure of Graham that the percentages of the additives is important in optimizing efficacy and controlling the color temperature of the lamp, we affirm the rejection of claim 3 under 35 U.S.C. § 103(a).

CONCLUSION

To summarize, the decision of the examiner to reject claims 1 and 3 under 35 U.S.C. § 103(a) is affirmed. The decision of the examiner to reject claims 2 and 4 under 35 U.S.C. § 103(a) is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136 (a).

AFFIRMED-IN-PART

LEE E. BARRETT	)	
Administrative Patent Judge	)	
	)	
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	)	
	)	BOARD OF PATENT
JOSEPH F. RUGGIERO	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
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STUART S. LEVY	)	
Administrative Patent Judge	)	

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