

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CURTIS E. SCOTT
and CHARLES I. McVEY

Appeal No. 96-1931
Application 07/995,635¹

ON BRIEF

Before THOMAS, JERRY SMITH and BARRETT, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. ' 134 from the examiner's rejection of claims 1, 2 and 4-14, which

¹ Application for patent filed December 18, 1992.

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constitute all the claims remaining in the application. An amendment after final rejection was filed on July 28, 1995 and was entered by the examiner.

The claimed invention pertains to an alumina article having a surface coated with a coating of oxide of one or more metals selected from the group consisting of Y, Hf, La, Zr, Dy, Sc and mixture thereof. The invention also relates to this article being formed for use as an arc discharge tube for a sodium vapor arc discharge lamp.

Representative claims 1 and 2 are reproduced as follows:

1. An alumina article having at least one surface wherein at least a portion of said surface is coated with a transparent coating of oxide of one or more metals selected from the group consisting of Y, Hf, La, Zr, Dy, Sc and mixture thereof.

2. A hollow alumina tube suitable for use as an arc tube for a sodium vapor arc discharge lamp, wherein an interior surface and an exterior surface of said tube are essentially continuously coated with a coating of oxide of at least one metal selected from the group consisting of Y, Hf, La, Zr, Dy, Sc and mixture thereof.

The examiner relies on the following references:

Koury et al. (Koury)	3,377,498	Apr. 09, 1968
Sulcs et al. (Sulcs)	3,723,784	Mar. 27, 1973
Coaton et al. (Coaton)	4,256,988	Mar. 17, 1981

The examiner's answer cites the following additional reference although it is not officially applied in a new ground of rejection:

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Agostinelli et al. (Agostinelli) 5,017,551 May 21, 1991

Claims 1, 5, 8, 9 and 14 stand rejected under 35 U.S.C. ' 102(b) as being anticipated by the disclosure of Sulcs. Claims 2, 6 and 10 stand rejected under 35 U.S.C. ' 103 as being unpatentable over Sulcs and Acommon knowledge in the art@ [answer, page 5]. Claims 4, 7 and 11-13 stand rejected under 35 U.S.C. ' 103 as being unpatentable over Sulcs and Acommon knowledge in the art@ and further in view of Coaton and Koury [answer, page 6].

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answer for the respective details thereof.

OPINION

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

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It is our view, after consideration of the record before us, that the disclosure of Sulcs anticipates the invention of claims 5, 8, 9 and 14 but does not anticipate the invention of claim 1. We are also of the view that the collective evidence relied upon and the level of skill in the particular art would have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claim 10. However, we reach the opposite conclusion with respect to the invention as set forth in claims 2, 4, 6, 7 and 11-13. Accordingly, we affirm-in-part. We also enter a new rejection of claim 1 using our authority under 37 CFR ' 1.196(b).

I. The rejection of claims 1, 5, 8, 9 and 14 as anticipated by Sulcs.

Anticipation under 35 U.S.C. ' 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference. Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 771, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984).

With respect to claim 1, the disclosure by Sulcs of the term **Atransparent coating@** is the key question. The examiner

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asserts that the ZrO_2 coating described at column 1, line 61 of Sulcs is inherently a transparent coating which transmits the visible portion of the spectrum while reflecting the infrared portion back toward the filament [answer, page 3]. Appellants argue that the white metal oxide described in Sulcs is an opaque coating and, thus, is not transparent as claimed. The examiner responds that ZrO_2 is a transparent oxide as claimed [answer, pages 7-8]. Finally, appellants maintain that the examiner has no support for his position [reply brief, pages 2-3].

The question of whether the zirconium oxide of Sulcs is a transparent coating is a question of fact which must be demonstrated by the examiner. The examiner relies on inherency and a reference to additional prior art which indicates that zirconium oxide is transparent. Although we have no doubt that some forms of zirconium oxide are transparent as asserted by the examiner, the issue before us is whether the zirconium oxide of Sulcs is transparent since it is the only reference cited in support of anticipation.

The coating in Sulcs is for the purpose of providing a heat shield which reduces heat loss near the end caps of the arc tube. Thus, Sulcs is not interested in letting light out through the coating, but instead, is interested in keeping heat in.

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Sulcs notes that reflective coatings of **Awhite metal oxides@** such as zirconium oxide have been tried for this purpose but do not adhere well to the lamp [column 1, lines 59-62]. A white metal oxide is not transparent as argued by the examiner because it must reflect all visible wavelengths in order to appear white. Thus, contrary to what the examiner asserts, the white metal oxide form of ZrO_2 used by Sulcs is reflective of all visible wavelengths and is not transparent at all.

Inherency requires that a structure or function be inevitably present. In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). The examiner's reliance on the transparency of ZrO_2 as being an inherent property of the coating in Sulcs appears to be not only a highly disputable fact but also most likely an incorrect finding. Since the examiner has not demonstrated that Sulcs discloses a transparent coating of the type recited in claim 1, we do not sustain the rejection of claim 1 as anticipated by Sulcs.

With respect to claims 5, 8 and 14, the question of anticipation concerns whether Sulcs discloses one of an interior surface or exterior surface of the alumina tube having a continuous coating of the oxide recited in each of the claims. Transparency of the coating is no longer recited. As we noted above,

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Sulcs does disclose an alumina tube having a zirconium oxide coating formed around the end caps of the arc tube. The examiner takes the position that the ZrO_2 coating in Sulcs is continuous because the coating does not have an abrupt break [answer, pages 3-4]. Appellants argue that since the coating in Sulcs appears

only at the end cap regions of the arc tube, there is a break in the area between the coatings which are located at the respective ends of the arc tube. Appellants also argue that the coating in Sulcs is not used for the same purpose as the coating in the invention. The examiner responds that the claims do not require that the continuous coating extend over the entire surface of the tube.

Appellants' argument regarding the purpose of the coating is not persuasive. Anticipation by a prior art reference does not require either the inventive concept of the claimed subject matter or the recognition of inherent properties that may be possessed by the prior art reference. Verdegaal Brothers Inc. v. Union Oil Co. of California, 814 F.2d 628, 633, 2 USPQ2d 1051, 1054 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987). It is enough that the article as recited in the claim exists in the

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prior art. Thus, appellants' argument that Sulcs teaches away from using the oxide coating is not relevant because Sulcs still suggests that such an article was known in the prior art.

Appellants' argument that the coating in Sulcs is not continuous as claimed is also not persuasive. Claims are to be given their broadest reasonable interpretation during prosecution. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404, 162 USPQ 541, 550 (CCPA 1969). It is improper to narrow the scope of the claim by implicitly reading in disclosed limitations from the specification which have no express basis in the claims. See Id. Thus, appellants' attempt to interpret the claims as requiring a continuous coating over an entire surface of the tube is based upon the disclosed invention rather than the clear language of the claims. We note that it would be a simple matter for appellants to amend the claims to require this specific narrower reading of the claims.

In our view, each of the coatings in Sulcs over the respective end caps of the arc tube is a continuous coating over the portion of the arc tube which it covers. When claims 5, 8 and 14 are given their broadest reasonable interpretation, it is seen that a surface of the tube in Sulcs is continuously coated

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with an oxide of the claimed genus. Therefore, we sustain the rejection of claims 5, 8 and 14 as anticipated by the disclosure of Sulcs. Claim 9 depends from claim 8 and is not separately argued by appellants. Accordingly, we also sustain the rejection of claim 9 as anticipated by the disclosure of Sulcs.

In summary, the rejection of claims 1, 5, 8, 9 and 14 as anticipated by Sulcs is sustained with respect to claims 5, 8, 9 and 14, but is not sustained with respect to claim 1.

II. The rejection of claims 2, 6
and 10 under 35 U.S.C. ' 103 as
unpatentable over Sulcs and Acommon
knowledge in the art.@

Claims 2 and 6 are similar in that each recites that the interior surface of the tube and the exterior surface of the tube are coated with the claimed oxide coating. Sulcs teaches at most that it is desirable to have a reflective coating around the end caps of the tube. The reflective coating can be a white metal oxide or a metal coating. The preferred embodiment of Sulcs uses a reflective metal band around the exterior surface of the tube at the end cap regions.

The examiner asserts that providing another identical oxide coating on the interior surface of Sulcs= arc tube for an identical purpose would involve only routine skill in the art, and that duplication of elements to multiply known results is an obvious thing to do [answer, page 5]. Appellants argue that there is no suggestion to duplicate the coating in Sulcs and there is no motivation to do so. They also argue that such suggestion cannot simply be pulled from the category of **A**common knowledge in the art@ [brief, page 6].

When the positions of the examiner and appellants are evaluated in view of the prior art evidence before us, we are of the view that appellants= arguments are convincing that the examiner has failed to factually support his position of obviousness. The position that a second coating in Sulcs represents a mere duplication of effort is without basis. Since the purpose of Sulcs is to have the coating reflect heat back onto the tube, a second coating would make no sense at all. If the coating works properly, then a second coating would be unnecessary since the first coating would reflect the heat back before it could get to the second coating. If the coating does not work to reflect heat back onto the tube, then a second coating of such a material

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would simply be a useless waste. There is simply no suggestion to use more than one coating in the Sulcs arc tube.

The only suggestion to use a second oxide coating on an arc tube comes from appellants' specification wherein it is disclosed that a different problem is solved by this second coating. Absent an awareness of the disclosed problem and solution, the artisan would have no basis to use a second coating in the Sulcs arc tube. Therefore, based on the prior art evidence provided to us, we conclude that the invention of claims 2 and 6 would not have been obvious to the artisan. Therefore, we do not sustain the rejection of claims 2 and 6.

Claim 10 depends from claim 9 and recites that the surface of the arc tube is polished. As noted above, the invention of claim 9 is anticipated by Sulcs. The examiner has provided a logical basis for polishing the surface of an arc tube [answer, page 5]. Appellants have presented no arguments in support of the separate patentability of claim 10. Since the examiner has established obviousness and since appellant has failed to overcome the prima facie case, we sustain the rejection

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of claim 10. Note In re Rinehart, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976).

In summary, the rejection of claims 2, 6 and 10 under 35 U.S.C. ' 103 as unpatentable over Sulcs and common knowledge in the art is sustained with respect to claim 10 but is not sustained with respect to claims 2 and 6.

III. The rejection of claims 4, 7 and 11-13 under 35 U.S.C. ' 103 as unpatentable over Sulcs and Acommon knowledge in the art@ in view of Coaton and Koury.

Claims 4 and 7 depend respectively from claims 2 and 6. As we just noted, the invention of claims 2 and 6 is not suggested by the teachings of Sulcs and common knowledge in the art.

The examiner relies on Coaton and Koury to teach the use of oxide coatings made from yttria, zirconia or a combination thereof.

The examiner also relies on arguments previously made as to why it would have been obvious to use oxide coatings on both the interior surface of the tube and the exterior surface of the tube [answer, pages 6-7]. Appellants argue that there is no basis to combine the teachings of Coaton and Koury with Sulcs because the coatings in Coaton and Koury have nothing to do with sodium

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discharge lamps and the coating in Sulcs is used for reflecting heat only and has nothing to do with reducing diffusion of fill materials [brief, pages 6-8].

When the positions of the examiner and appellants are evaluated in view of the prior art evidence before us, we are again of the view that appellants' arguments are convincing that the examiner has failed to factually support his position of obviousness. The position that a second coating in Sulcs would have been obvious to the artisan is incorrect for reasons we discussed above. We also agree with appellants that there is no basis to combine the teachings of Sulcs with the teachings of Coaton and Koury. The coatings in Coaton and Koury are at cross purposes with the coating in Sulcs. The Sulcs coating reflects light and heat back onto the tube whereas the coatings of Coaton and Koury are designed to be transparent and to diffuse elements other than sodium. There is no evidence other than appellants' own disclosure that the particular oxides recited in the claims would be effective in a sodium discharge lamp. The examiner's decision to combine these particular prior art references can only be supported by the hindsight reconstruction of the claimed

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invention. Therefore, we do not sustain the rejection of claims 4 and 7.

Claims 11-13 depend from claim 10. We sustained the rejection of claim 10 for reasons noted above. Claims 11-13 recite that the coating is made from yttria or a combination of yttria and zirconia. The examiner relies on Coaton and Koury to teach that oxide coatings of yttria and zirconia were known to diffuse the loss of fill materials in lamps. Appellants again argue that there is no basis for combining the teachings of Coaton and Koury with the teachings of Sulcs.

For reasons we have just discussed, we agree with appellants that the only basis for combining the teachings of Coaton and Koury with the teachings of Sulcs comes from the hindsight attempt to reconstruct the claimed invention. Such hindsight reconstruction is improper. We do not sustain the rejection of claims 11-13 on the evidence provided by the examiner.

In summary, the rejection of claims 4, 7 and 11-13 under 35 U.S.C. ' 103 as unpatentable over Sulcs and common knowledge in the art in view of Koaton and Koury is not sustained for any of the claims.

IV. New rejection of claim 1 under
37 CFR ' 1.196(b).

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We reject claim 1 under 35 U.S.C. ' 102(b) as being anticipated by the disclosure of Agostinelli, which reference was newly cited in the examiner's answer as noted above. Example 1 of Agostinelli teaches a polished quartz substrate having a thin film of zirconia (ZrO_2) produced thereon. The zirconia film is indicated as being transparent [column 20, line 36]. Example 5 of Agostinelli teaches that the substrate could be made from polycrystalline alumina [column 21, lines 54-55]. The invention as broadly recited in claim 1 is fully met by the article described in example 5 of Agostinelli.

We note that appellants indicate that Agostinelli is a reference under 35 U.S.C. ' 102(e), and that they will antedate the reference if it is actually applied in a rejection [reply brief, pages 1-2]. If this point were correct, we might be inclined to let the examiner decide if the rejection should be made. It appears to us, however, that Agostinelli qualifies as prior art under 35 U.S.C. ' 102(b). The filing date of the application is December 18, 1992. The issue date of Agostinelli is May 21, 1991. Since May 21, 1991 is more than one year before

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December 18, 1992, we view the reference as prior art under Section 102(b). Since a reference under Section 102(b) cannot be antedated, we make this new ground of rejection in order to expedite the prosecution in this case.

In summary, the rejections of claims 1, 2 and 4-14 have been sustained with respect to claims 5, 8-10 and 14, but have not been sustained with respect to claims 1, 2, 4, 6, 7 and 11-13. Accordingly, the decision of the examiner rejecting claims 1, 2 and 4-14 is affirmed-in-part.

Any request for reconsideration or modification of this decision by the Board of Patent Appeals and Interferences based upon the same record must be filed within one month from the date hereof. 37 CFR ' 1.197.

With respect to the new rejection under 37 CFR ' 1.196(b), should appellants elect the alternate option under that rule to prosecute further before the Primary Examiner by way of amendment or showing of facts, or both, not previously of record, a shortened statutory period for making such response is hereby set to expire two months from the date of this decision. In the event appellants elect this alternate option, in order to preserve the right to seek review under 35 U.S.C. '' 141 or 145 with respect to the affirmed rejections, the effective date of

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the affirmance is deferred until conclusion of the prosecution before the examiner unless, as a mere incident to the limited prosecution, the affirmed rejection is overcome. In other words, the new ground of rejection is not considered final for the purpose of judicial review under 35 U.S.C. ' 141 or ' 145.

If the appellants elect prosecution before the examiner and this does not result in allowance of the application, abandonment or a second appeal, this case should be returned to us for final action on the affirmed rejections, including any timely request for reconsideration thereof.

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
37 CFR ' 1.196(b)

JAMES D. THOMAS
Administrative Patent Judge

JERRY SMITH
Administrative Patent Judge

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