

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JERZY Z. MYDLARZ,
JOHN D. LEWIS,
ROGER L. KLAUS
and RAYMOND S. EACHUS

Appeal 2008-2389
Application 10/639,537
Technology Center 1700

Decided: April 30, 2008

Before EDWARD C. KIMLIN, CHUNG K. PAK, and
PETER F. KRATZ, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-23. Claim 1 is illustrative:

1. A radiation-sensitive emulsion comprised of silver halide grains (a) containing greater than 50 mole percent chloride, based on silver, (b) having greater than 50 percent of their surface area provided by {100} crystal faces,

and (c) having a central portion accounting for up to 99 percent of total silver and containing a first dopant of Formula (I):



wherein n is -2, -3 or -4, and L₆ represents bridging ligands which can be independently selected, provided that at least four of the ligands are anionic ligands, and at least one of the ligands is a cyano ligand or a ligand more electronegative than a cyano ligand; and

a second dopant comprising an iridium coordination complex having ligands each of which are more electropositive than a cyano ligand;

wherein the first dopant and the second dopants are located together in a common dopant band in the central portion of the silver halide grains, where the common dopant band is formed by concurrently introducing the first and second dopants into the silver halide grains after at least 70 percent of the silver has been precipitated for such grains and before 90 percent of the silver has been precipitated for such grains, and wherein the second dopant is present in the silver halide grains in a concentration of at least 10⁻⁷ mole/mole of total silver.

The Examiner relies upon the following references in the rejection of the appealed claims:

Olm	5,360,712	Nov. 1, 1994
Bell	5,474,888	Dec. 12, 1995
Mydlarz	5,783,373	Jul. 21, 1998

Appellants' claimed invention is directed to a radiation-sensitive emulsion comprising silver halide grains having a central portion comprising a first ruthenium dopant and a second iridium dopant. The first and second dopants are located in a common dopant band in the central portion of the silver halide grains that is formed by introducing the dopants after at least 70%, but before 90%, of the silver has been precipitated.

In a Decision dated August 16, 2006, the Board affirmed the Examiner's rejection of claims 1-18 under 35 U.S.C. § 102(b) as being anticipated by Bell.¹ The Board's Decision also included a Remand to the Examiner to consider Appellants' arguments with respect to the Specification data that is relied upon by Appellants as evidence of unexpected results. The Board rendered no decision on the merits of the Examiner's rejections under 35 U.S.C. § 103(a). Appellants' application is now before us to consider their Request for Rehearing and their appeal of the Examiner's final rejection of all the appealed claims under 35 U.S.C. § 103(a) as being unpatentable over Mydlarz, the rejection of claims 19-23 under 35 U.S.C. § 103(a) as being unpatentable over Bell in view of Mydlarz, and the rejection of claims 12 under 35 U.S.C. § 103(a) as being unpatentable over Bell in view of Olm and Mydlarz.

We consider first Appellants' Request to Reconsider our Decision to sustain the Examiner's § 102 rejection of claims 1-18 over Bell. Appellants maintain that Bell is not specifically directed towards a ruthenium-containing dopant, and "there is no teaching as to any preferred location specifically for ruthenium-containing dopants, especially relative to the location of the hexacoordination complex comprising iridium employed by Bell" (Request, sentence bridging pages 1-2). However, as stated in our Decision, "Bell expressly discloses that the dopant preferably comprises a transition metal selected from Group 8 of the periodic table, and specifically exemplifies many ruthenium-containing dopants in the table bridging columns 4 and 5 (see also column 4, lines 8-11)" (Decision 5, first para.).

¹ Appellants have submitted a Request for Rehearing pertaining to our affirmance of the § 102 rejection.

Consequently, based on this explicit disclosure by Bell, we are convinced that Bell fairly describes to one of ordinary skill in the art Appellants' ruthenium-containing dopant within the meaning of § 102. As for the claimed location for the ruthenium-containing and iridium-containing dopants, we adhere to our opinion that Bell fairly describes the introduction of both the first and second dopants after precipitation of amounts of silver that fall within the claimed range of 70-90%, particularly since the breadth of the appealed claims does not require that **all** of the first and second dopants be introduced after at least 70%, and before 90%, of the silver has been precipitated. The "comprises of" and "containing" language results in the appealed claims encompassing emulsions comprising first and second dopants in the recited band and outside such band, as described by Bell.

Appellants' Request also makes the argument that the Board has overlooked the claimed concentration for the second dopant, namely, at least 10^{-7} mole/mole of total silver. However, we did not overlook the claimed concentration, but we agreed with the Examiner that Bell's more preferred concentration of 5.0×10^{-6} moles of iridium per mole of silver chloride falls within and, thereby, meet the claimed range (*see* col. 8, l. 33).

We now turn to the Examiner's § 103 rejections of the appealed claims. Upon thorough review of Appellants' arguments for patentability, as well as the Specification data relied upon in support thereof, we find ourselves in agreement with the Examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103. Accordingly, we will sustain the Examiner's § 103 rejections for the reasons set forth in the Answer and we add the following primarily for emphasis.

Concerning the § 103 rejection of all the appealed claims over Mydlarz, the reference teaches, like appellants, a combination of dopants for the central portion of silver halide grains wherein one of the dopants is preferably a ruthenium-containing compound and the other dopant is an iridium-containing compound. As explained by the Examiner, Mydlarz teaches that the ruthenium dopant is most preferably introduced after 75 and optimally 80% of the silver has been precipitated but before precipitation of the central portion of the grains has been completed (col. 12, ll. 23 et seq.). Also, Mydlarz teaches that the iridium dopant is most preferably introduced after 85 and optimally 90% of the silver has been precipitated but before precipitation of the central portion of the grains has been completed (col. 13, ll. 62 et seq.). As a result, based on the Mydlarz's disclosure, we fully concur with the Examiner that it would have been obvious for one of ordinary skill in the art to introduce Appellants' ruthenium and iridium dopants after at least 70% of the silver has been precipitated and before 90% of the silver has been precipitated. We agree with the Examiner that Mydlarz fairly teaches that both dopants may be in the same band, particularly since the reference provides no disclosure that the dopants should be in separate bands. Although Appellants stress that every example of Mydlarz where the dopants are employed in the same emulsion grains shows the dopants in separate bands, it is axiomatic that a reference must be considered for all that it fairly teaches beyond its specific examples. Since Mydlarz teaches that the ruthenium dopant is most preferably introduced before 95% of the silver has been precipitated (col. 12, ll. 27-29), and that the iridium dopant is introduced optimally before 95% of the silver has been

precipitated, (col. 13, ll. 66 et. seq.), we find that one of ordinary skill in the art would have understood that the reference teaches that both dopants may be present in the same band.

Appellants submit that "[t]he present invention represents an improvement over the general teachings in Mydlarz et al., wherein Applicants have discovered that specific combinations of ruthenium complex and iridium complex, specific dopant common band location, and specific iridium complex dopant concentration results in unexpected improved performance, as evidenced by the inventive and comparison examples included in the application specification" (Principal Br. 6, second para.). We have reviewed Appellants' Specification examples and comparative data but we must agree with the Examiner that the Specification data falls far short of being commensurate in scope with the degree of protection sought by the appealed claims. *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983); *In re Clemens*, 622 F.2d 1029, 1035 (CCPA 1980). As noted above, contrary to the Specification data and the thrust of Appellants' arguments based thereon, the claimed subject matter is not limited to emulsions comprising silver halide grains wherein the entirety of the ruthenium and iridium dopants are located in the same band. The appealed claims embrace silver halide grains where some fractions of the total of both dopants resides in the recited band while the remaining fractions are located outside the band. As a result, there is no clear line of demarcation between silver halide grains within the scope of the appealed claims and those within the disclosure of Mydlarz. Claim 1 on appeal fails to define any concentration for the ruthenium dopant whereas the iridium dopant concentration is very broadly defined as at least the minimum amount of 10^{-7}

mole/mole of total silver. On the other hand, the Specification examples representative of the present invention use only two concentrations for each dopant.

Furthermore, appealed claim 1 embraces a large class of both ruthenium-containing dopants and iridium-containing dopants, whereas the Specification examples are limited to only one ruthenium dopant, $K_4Ru(CN)_6$ and two iridium dopants, $K_2IrCl_5(5\text{-methyltriazole})$ and K_3IrCl_6 . Manifestly, these specific dopants exemplified in the Specification are hardly commensurate in scope with the large classes of dopants recited in independent claim 1. Appellants have not established on this record any basis for reasonably extending the Specification results to the myriad of dopants within the scope of claim 1. Furthermore, as pointed out by the Examiner, all but one of the Specification examples for the claimed invention are directed to a considerably narrower band, 75-80%, than the claimed band of 70-90%. Again, Appellants have not set forth any reason to believe that the reported results in the Specification translate to a band outside the 75-80% exemplified, particularly with respect to the large number of other ruthenium and iridium dopants within the scope of the appealed claims.

Accordingly, although Appellants' Specification data shows improved results for a combination of very particular ruthenium and iridium dopants, in a very narrow band at specific concentrations, it is our judgment that Appellants have not carried their burden of demonstrating such improved results over the considerable breadth of the appealed claims, which includes the presence of both dopants in bands outside the recited band, as well as

large classes of ruthenium and iridium dopants at a considerably wide range of concentrations.

Also, since we find that the subject matter of claims 1-23 would have been obvious over Mydlarz alone, it follows that we will sustain the Examiner's separate § 103 rejection of claims 19-23 over the combined teachings of Bell and Mydlarz. Moreover, Appellants have not refuted the Examiner's reasonable conclusion that it would have been obvious to one of ordinary skill in the art to prepare the material of Bell by exposing and digitally imaging the material in the manner taught to be conventional and useful by the Mydlarz reference with the reasonable expectation of achieving material having an increased photographic speed (Ans. 6, last para.).

As for the Examiner's § 103 rejection of claim 12 over Bell, Mydlarz and Ohm, we agree with the rationale set forth at page 7 of the Answer regarding the obviousness of utilizing iridium dopant complexes containing 5 halide ligands and a thiazole or 5-methyl thiazole ligand.

In conclusion, based on the foregoing, Appellants' Request to reconsider our Decision affirming the Examiner's § 102 rejection over Bell is denied. Also, since it is our judgment that the evidence of obviousness presented by the Examiner outweighs the evidence of nonobviousness proffered by Appellants, the Examiner's rejections under 35 U.S.C. § 103 are affirmed.

Appeal 2008-2389
Application 10/639,537

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv)(effective Sept. 13, 2004).

AFFIRMED

cam

PAUL A. LEIPOLD
PATENT LEGAL STAFF
EASTMAN KODAK COMPANY
343 STATE STREET
ROCHESTER, NY 14650-2201