

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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 GERARDUS V.A. ABEN and
LEO H.M. KRINGS

Appeal No. 1998-0870
Application No. 08/325,015

ON BRIEF

Before JOHN D. SMITH, WALTZ, and DELMENDO, **Administrative Patent Judges**.

DELMENDO, **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 through 9, which are all of the claims pending in this application.

According to appellants, the invention is directed to a display device having a display screen provided with an antistatic, light-absorbing coating and to a method of

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manufacturing an antistatic, light-absorbing coating on a display screen of a display device (Brief, page 2).

37 C.F.R. § 1.192(c)(7)(1995)¹ reads as follows:

"Grouping of claims. For each ground of rejection which appellant contests and which applies to a group of two or more claims, the Board shall select a single claim from the group and shall decide the appeal as to the ground of rejection on the basis of that claim alone **unless a statement is included that the claims of the group do not stand or fall together and, in the argument under paragraph (c)(8) of this section, appellant explains why the claims of the group are believed to be separately patentable. Merely pointing out differences in what the claims cover is not an argument as to why the claims are separately patentable.**"
(Bolded emphasis added.)

Thus, under the above rule, two requirements must be met in order to have different sets of claims considered separately in an appeal. First, the appeal brief must positively state that the claims do not stand or fall together. Second, the appeal brief must explain why the claims are separately patentable. Merely reciting what the claims cover is not sufficient.

¹ We apply the version of this rule in effect at the time of the filing of the appeal brief.

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In the case before us, Appellants failed to positively indicate that the claims do not stand or fall together. Instead, appellants stated as follows: "Claims 1-9 are patentable for similar reasons and stand together" (Brief, page 5). The examiner interpreted appellants' statement to mean that "claims 1-9 stand or fall together" (Answer, page 3). Although appellants had ample opportunity to dispute the examiner's interpretation, they did not do so.² Therefore, consistent with 37 C.F.R. § 1.192(c)(7) and (c)(8), we select claim 1 from the group of claims and decide this appeal as to the ground of rejection on the basis of claim 1 alone.

Claim 1 is illustrative of the subject matter on appeal and is reproduced below:

1. A display device comprising a display screen having an antistatic, light-absorbing coating which contains latex particles of electrconductive [sic] polypyrrole, characterized in that the coating predominately consists of a homogeneous mixture of said latex particles of polypyrrole, a steric stabilizer for said particles of polypyrrole and antimony-doped tin oxide particles.³

² Cf. *Ex parte Schier*, 21 USPQ2d 1016, 1019 (Bd. Pat. App. & Int. 1991).

³ We note that the copy of claim 1 in the appendix to the Brief does not correspond identically to claim 1 presented in the Amendment filed September 10, 1996. Claim 1 reproduced here corresponds to amended claim 1 presented in

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The examiner has relied upon the following references as evidence of obviousness:

Armes et al. (Armes)	4,959,162	Sept. 25, 1990
Wessling et al. (Wessling)	5,476,612	Dec. 19, 1995
		(Filed Nov. 9, 1992)
De Boer (Published European Patent Application)	533,256	Mar. 24, 1993
Kinoshita et al. (Kinoshita) 9, 1994 (Published European Patent Application)	585,819	Mar.

The issue presented before us is whether the examiner correctly rejected claims 1 through 9 under 35 U.S.C. § 103 as unpatentable over the combined teachings of Kinoshita, De Boer, Armes and Wessling (Answer, page 4). Based on our review of the entire record, we **affirm** the examiner's rejection essentially for the reasons stated in the Answer. We add the following comments for emphasis and completeness.

OPINION

We begin our consideration of the issue before us by determining the scope of any contested claimed subject matter.

the aforementioned Amendment.

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Gechter v. Davidson, 116 F.3d 1454, 1457, 1460 n.3, 43 USPQ2d 1030, 1032, 1035 n.3(Fed. Cir. 1997); ***In re Paulsen***, 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994). In proceedings before the U.S. Patent and Trademark Office, claims are interpreted by giving words their broadest reasonable meaning in their ordinary usage, taking into account the written description found in the specification. ***In re Morris***, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997)("The PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art."); ***In re Sneed***, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983).

As seen from reproduced claim 1 above, appellants' claimed subject matter calls for a display device comprising a display screen having an antistatic, light absorbing coating which contains latex particles of electroconductive polypyrrole, wherein the coating "predominately consists of" a homogeneous mixture of latex particles of polypyrrole, a

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steric stabilizer for the polypyrrole particles, and antimony-doped tin oxide particles.

As to the phrase "predominately consists of" which is used to define the coating, the phrase "consists of" is ordinarily interpreted as excluding any unspecified ingredients. *PPG Industries Inc. v. Guardian Industries Corp.*, 156 F.3d 1351, 1354, 48 USPQ2d 1351, 1353-54 (Fed. Cir. 1998); *Ex parte Davis*, 80 USPQ 448, 449 (Bd. App. 1948).

In the present case, however, the phrase "consists of" is qualified, and broadened, by the term "predominately." According to *Webster's Ninth New Collegiate Dictionary*, Merriam-Webster Inc., Springfield, MA (1985) at page 927,⁴ the root term "predominate" is synonymous with "predominant." The term "predominantly," which was used in original claim 1, is defined as "for the most part: mainly." Thus, the ordinary meaning of "coating predominately consists of a homogeneous mixture of said latex particles of polypyrrole, a steric stabilizer for said particles of polypyrrole and antimony-doped tin oxide particles" would be that the coating for the

⁴ We attach a copy of this reference for appellants' convenience.

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most part consists of the specified homogeneous mixture. In other words, the final coating on the display screen can contain other unspecified ingredients as long as it mainly consists (i.e., greater than 50%) of the specified homogeneous mixture.

We next look to the specification to determine whether appellants are using the phrase "predominately consists of" in a manner that is different from its ordinary meaning. However, we do not find any clear definition or explanation in the specification that would indicate that the phrase "predominately consists of" is being used more restrictively than in the ordinary sense. In the appellants' specification at page 3, line 33 to page 4, line 5, appellants state that the "coating in accordance with the invention does not comprise a matrix of SiO₂ . . . the coating consists of a homogeneous mixture of both types of particles." However, the language found in the specification (i.e., "coating . . . does not comprise SiO₂" or "coating consists of") is not recited in claim 1 on appeal.⁵ Nor is the claimed phrase "predominately

⁵ It is well settled that limitations from the specification are not to be read into the claims. *Comark Communication, Inc. v. Harris Corp.*, 156 F.3d

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consists of" specifically defined anywhere in the original disclosure. Moreover, at page 3, lines 19 and 20 of the specification, appellants state: "In addition to polypyrrole particles, the coating in accordance with the invention **comprises** particles of antimony-doped tin oxide (ATO or Sb:SnO₂)" (Emphasis added.) At best, the specification is equivocal, and does not shed any light, regarding the meaning of "predominately consists of." Therefore, we give the phrase "predominately consists of" its broadest ordinary meaning. In so doing, we determine that the phrase "predominately consists of" opens the coating to unspecified ingredients, as long as the specified homogeneous mixture is present for the most part (i.e., greater than 50%).

Turning to the rejection, the examiner's position is stated as follows:

"It would have been obvious to one of ordinary skill in the art at the time of the invention to use conductive polymers such as polypyrrole instead of carbon black as suggested by Wessling and De Boer in the apparatus of Kinoshita because both are conductive and because De Boer teaches that use of latex produces an antistatic

1182, 1186, 48 USPQ2d 1001, 1004 (Fed. Cir. 1998); *In re Van Geuns*, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993).

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coating which can adhere firmly to the display screen, is substantially mechanically durable and scratch resistant, resistant to solvents and cleaning agents and exhibits suitable optical properties such as bringing the light transmission to a desired value (column 1, lines 30-47). . . . It would have been obvious to one of ordinary skill in the art at the time of the invention to use a steric stabilizer as taught by Armes et al. when using conductive polymers as suggested by Wessling and De Boer in the apparatus of Kinoshita to prevent precipitation" (Answer, pages 4 and 5).

On the other hand, appellants argue that "[t]here is nothing in this combination of references that would lead a person of ordinary skill in the art to provide on the surface of a display screen of a display device an antistatic light-absorbing coating predominantly consisting of latex particles of polypyrrole and antimony-doped tin oxide particles" (Brief, page 6).

As correctly found by the examiner, Kinoshita discloses a coating material for use in the formation of an antistatic/high refractive index film comprising a fluid containing a mixture of an antimony doped tin oxide fine powder and a black colored electrically conductive fine powder (page 3, lines 31-36; page 21, lines 36-38). The film can be used on various substrates including display screens such as a

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cathode ray tube (CRT) (page 2, lines 8-18; page 4, lines 6-9; page 23, lines 5-13; Figure 1). Kinoshita also discloses that the black colored electrically conductive fine powder (e.g., carbon black) may be of a black, gray, blackish gray, or blackish brown shade and must possess conductivity (page 4, lines 43-48). According to Kinoshita, the black colored electrically conductive fine powder, particularly when it has a conductivity higher than the antimony doped tin oxide particles, generates light absorption (page 4, lines 27-42; page 8, lines 1-5 and 37-42). Further, Kinoshita teaches that dispersants such as anionic surfactants, cationic surfactants, ampholytic surfactants, and non-ionic surfactants may be used to disperse the carbon black fine powder, and that the dispersant is preferably polymeric (page 5, lines 20-22).⁶ As in appellants' claimed invention, Kinoshita also teaches a uniform (i.e., homogeneous) aqueous mixture of the antimony doped tin oxide and the black colored electrically conductive fine powder (page 6, lines 28-32; page 10, lines 5-10; page 11, lines 39-44; page 13, lines 23-27).

⁶ According to Armes, polymeric surfactants are often referred to in the art as "steric stabilizers" (column 1, lines 19-24).

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In a working example, Kinoshita shows a 17-inch TV Braun tube CRT panel that has been spin coated with a first layer film of an aqueous mixture comprising 1.9 g of antimony doped tin oxide, 0.1 g of carbon black fine powder, 0.15 g of a 1% aqueous solution of a polymeric dispersant, and 97.85 g of water (Preferred Embodiment 17 together with page 6, lines 35-41). After the first layer is coated, a second layer of tetraethoxysilane, HCl, and ethanol is deposited thereon.

Thus, the examiner correctly found that the subject matter of claim 1 on appeal differs from Kinoshita's disclosure only in that a polypyrrole and a steric stabilizer (i.e., a dispersant or a surfactant) therefor is used instead of carbon black and a dispersant for the carbon black. However, Kinoshita's teaching is not limited to the use of carbon black or inorganic materials. Kinoshita repeatedly teaches the use of any "black colored electrically conductive powder" (page 3, lines 31-33; page 4, lines 43-45; page 6, lines 28-32; page 21, lines 36-38).

Wessling, like Kinoshita, is concerned with antistatic, electroconductive materials and the elimination of electrostatic charges (abstract; column 1, lines 7-10).

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Wessling shows that finely divided (preferably having an average particle size less than or equal to 1 micron), intrinsically conductive polymers with a conjugated **B**-electron system that can be rendered electrically conductive by complexation, such as polypyrrole, and finely divided (preferably having an average particle size less than or equal to 1 micron) carbon black having a specific surface area of greater than 80 m²/g are interchangeable as part of a system of finely divided electrically conductive materials in polymer matrix compositions including enamels (column 2, lines 8-30 and 53-64; column 4, lines 12-18).

De Boer discloses that an aqueous electroconductive polypyrrole latex, although used in combination with an aqueous solution of hydrolyzed alkoxy silane, provides an antistatic coating for display screens (column 1, lines 1-4 and 30-47). Further, De Boer teaches that polypyrrole is black and that polyvinyl alcohol is a steric stabilizer (i.e., a dispersant or surfactant) for polypyrrole (column 3, lines 23-38).

Armes teaches an electrically conductive polypyrrole-containing composition that has good film-forming

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characteristics and can be processed by conventional coating techniques (column 1, lines 11-24; column 1, line 34 to column 2, line 37). Additionally, Armes teaches the use of vinyl pyridine-containing polymer as a steric stabilizer for the polypyrrole to prevent precipitation (column 2, lines 19-36; column 3, lines 31-41). Although Armes uses centrifugation and decantation steps after oxidative polymerization, some of the steric stabilizer remains in the final conductive polymer composition (column 4, lines 19-37). Further, Armes also shows that polypyrrole is black (see, e.g., Example 1).

Given these disclosures, we agree with the examiner that one of ordinary skill in the art would have found it obvious within the meaning of 35 U.S.C. § 103 to use polypyrrole (e.g., the electroconductive latex composition of Armes as described on column 4, lines 19-37) in lieu of carbon black as the black electrically conductive fine powder in Kinoshita's Preferred Embodiment 17. We reach this conclusion because we find that one of ordinary skill in the art would have recognized from the collective teachings of Wessling, De Boer, and Armes that carbon black and polypyrrole have comparable electrically conductive properties and both would be equally

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suitable in Kinoshita's antistatic coating, thus making them interchangeable for the purposes disclosed in Kinoshita. ***In re Corkill***, 771 F.2d 1496, 1500, 226 USPQ 1005, 1008 (Fed. Cir. 1985); ***In re Longi***, 759 F.2d 887, 896, 225 USPQ 645, 651 (Fed. Cir. 1985); ***In re Fout***, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982).

As to the steric stabilizer for the polypyrrole, we conclude that it would also have been obvious to one of ordinary skill in the art to use an appropriate amount of steric stabilizer for the polypyrrole in Kinoshita, because Kinoshita suggests the use of a dispersant (i.e., a surfactant or a steric stabilizer) for the black electrically conductive fine powder particles and its incorporation would be expected to prevent precipitation from the aqueous dispersion (i.e., maintain a stable dispersion) as suggested by Armes.

Appellants urge that the coating of the present invention provides the advantages of not requiring the use of harmful organic solvents, of not requiring a time-consuming centrifuging step in its preparation, and not being subjected to being washed away when a layer of alcoholic solution of an

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alkoxysilane is provided on it to provide a supplemental layer (Brief, page 4). First, with respect to the use of harmful organic solvents, Kinoshita teaches that the organic solvent is optional. In this regard, Kinoshita states as follows:

"The coating material for use in the formation of the first layer of film described above is obtained by the mixing and dispersion of antimony doped tin oxide fine powder and black colored conductive fine powder and a dispersant **and/or** a solvent possessing a high boiling point and a high surface tension, by means of a method in which mixing and dispersion is conducted in water **or** in an organic solvent using an ultrasonic homogenizer or a sand mill or the like." (Emphases added; page 6, lines 28-32.)

Second, with respect to the centrifuging step described in either Armes or De Boer, claim 1 on appeal does not exclude a product that is obtained by a method including a centrifuging step. Nor does the claim recite any amount limitation for the steric stabilizer that would distinguish the claimed subject matter over the applied prior art references. Third, with respect to the coating not being subjected to being washed away when a layer of alcoholic solution of alkoxysilane is applied over it, we note that Kinoshita successfully applies a second layer film of an alcoholic solution of an alkoxysilane without any difficulty (see, e.g., Preferred Embodiment 17).

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In appellants' specification, the antistatic, light-absorbing coating is dried following spin coating (page 7, lines 28-32). As in appellants' specification, Kinoshita also dries the antistatic coating (see, e.g., Preferred Embodiment 1). Accordingly, we do not consider any of the alleged "advantages" to be persuasive, because there is no evidence (e.g., comparative experiments) on this record to show any nonobvious difference between the subject matter of claim 1 on appeal and the closest prior art, which is Kinoshita.

Appellants contend that De Boer teaches the use of only a single electroconductive species and would therefore lead a person of ordinary skill in the art away from the claimed combination of electroconductive particles (i.e., the combination of the antimony doped tin oxide and the polypyrrole). Further, appellants urge that De Boer's coating requires a silicon dioxide matrix, which would lead one of ordinary skill in the art from the use of any discrete particles in addition to the latex particles of polypyrrole. We, like the examiner, reject these arguments, because they ignore the collective teachings of all the references including Kinoshita. The question is what the combined

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teachings of the applied references would have suggested to one of ordinary skill in the art; nonobviousness cannot be established by attacking references individually when the rejection is based on a combination of references. ***In re Merck & Co.***, 800 F.2d 1091, 1097, 231 USPQ 375, 380 (Fed. Cir. 1986); ***Cable Elec. Prods., Inc. v. Genmark, Inc.***, 770 F.2d 1015, 1025, 226 USPQ 881, 886-87 (Fed. Cir. 1985); ***In re Keller***, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

As we discussed above, we find that the combined teachings of the applied references would have led one of ordinary skill in the art to substitute the carbon black with polypyrrole, because the references show that these materials are interchangeable as black electrically conductive fine powders called for in Kinoshita. Thus, we conclude that the applied prior art references would have provided ample motivation or suggestion to one of ordinary skill in the art to arrive at appellants' claimed subject matter.

It also appears that appellants are alleging that Armes and Wessling constitute non-analogous art. We are not persuaded by this argument. As correctly stated by the

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examiner, the test for determining whether a prior art reference is analogous is as follows: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is

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not within the inventor's endeavor, whether the reference is reasonably pertinent to the particular problem with which the inventor is involved. ***In re Clay***, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060 (Fed. Cir. 1992).

Here, we note that appellants' field of endeavor is a display device comprising a display screen having an antistatic, light-absorbing coating containing electrically conductive polypyrrole. See claim 1 on appeal. Further, we note that appellants and Kinoshita are both concerned with the problem of providing antistatic, electroconductive coatings. Although Armes and Wessling do not relate to display screens, we hold that they are reasonably pertinent to the problems with which appellants and Kinoshita are concerned (i.e., antistatic and electro-conductive properties). Specifically, Armes discloses at column 1, lines 11-14 as follows:

"Conductive polymers have been widely investigated due to growing interest in their use in, e.g., anti-static coatings, conductive paints, electromagnetic shielding, electrode coatings and the like." Since Armes relates to electroconductive polymers, which are commonly used in antistatic coatings, it would be reasonably pertinent to

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appellants' problem of providing an antistatic, electrically conductive coating. Similarly, Wessling relates to antistatic or electrically conductive polymer compositions (abstract), and thus appellants would have been motivated to consider its teachings in addressing the need for an antistatic, electrically conductive coating on a display screen.

Appellants urge that even if Kinoshita and Wessling are combined, the finely divided non-conductive material and the non-conductive polymer matrix in Wessling would provide a coating that, unlike the claimed coating, would not "predominantly consist of" latex particles of polypyrrole and antimony doped tin oxide particles. We do not subscribe to this argument. First, as we discussed above, Wessling is cited to show that carbon black and polypyrrole have comparable electroconductive properties, thus making them interchangeable for the purposes disclosed in Kinoshita. Again, we are not persuaded by appellants' attack of the references individually. Further, as we pointed out above, the phrase "predominately consists of" is much broader in scope than "consists of." In this regard, the finely divided non-conductive material (component C) of Wessling is optional

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(column 4, lines 19-21), and, even if present, it can be included in amounts as low as 10% based on the amount of the polypyrrole (component A) (column 3, lines 22-31).

Furthermore, we determine that the non-conductive matrix polymer may constitute the minor portion of the composition (Examples 4, 18, and 19).

Accordingly, after a careful consideration of the totality of the record, including the specification, the claims, and all of the arguments advanced by the appellants and the examiner, we conclude that the subject matter of the claims on appeal would have been obvious to one of ordinary skill in the art at the time of appellants' invention within the meaning of 35 U.S.C. § 103.

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

AFFIRMED

JOHN D. SMITH

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Administrative Patent Judge)	
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)	BOARD OF PATENT
THOMAS A. WALTZ)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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ROMULO H. DELMENDO)	
Administrative Patent Judge)	

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CORPORATE PATENT COUNSEL
US PHILIPS CORPORATION
580 WHITE PLAINS ROAD
TARRYTOWN, NY 10591