

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte FUJIO YAGIHASHI, TOMOYOSHI FURIHATA,
JUN WATANABE, AKINOBU TANAKA, YOSHIO KAWAI,
and TADAHITO MATSUA

Appeal No. 1999-2119
Application No. 08/815,410

ON BRIEF

Before KIMLIN, GARRIS, and DELMENDO, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the final rejection of

Appeal No. 1999-2119
Application No. 08/815,410

three components, (a) a poly(hydroxystyrene) resin, (b) a dissolution inhibitor and (c) an onium salt of the formula $(R)_3S^+M$ wherein only one or two of the R's is a t-alkoxy substituted phenyl group. Further details of this appealed subject matter are set forth in representative independent claim 6 which reads as follows:

6. An aqueous alkali-developable positive resist material consisting essentially of three components, (a) a poly(hydroxystyrene) resin in which hydrogen atoms of the hydroxy groups are partly replaced by t-butoxycarbonyl groups, (b) a dissolution inhibitor and (c) an onium salt, wherein the three components (a), (b) and (c) have the weight proportions defined by the relations: $0.55 \leq a$, $0.07 \leq b \leq 0.40$, $0.005 \leq c \leq 0.15$, and $a + b + c = 1$; said onium salt being selected from the onium salts of the formula $(R)_3S^+M$, wherein the three R's are the same or different, each being an aryl group, provided that only one or two of the R's is a t-alkoxy substituted phenyl group, and M is a trifluoromethane sulfonate or paratoluenesulfonate anion.

The references relied upon by the examiner as evidence of obviousness are:

| | | |
|---------------------------------|-----------|---|
| Nguyen-Kim et al. (Nguyen-Kim) | 5,035,979 | Jul. 30, 1991 |
| Schwalm et al. (Schwalm '037) | 5,220,037 | Jun. 15, 1993 |
| Murata et al. (Murata '695) | 5,580,695 | Dec. 3, 1996 (effective filing date Feb. 19, 1993) |
| Watanabe et al. (Watanabe '787) | 5,624,787 | Apr. 29, 1997 |

Appeal No. 1999-2119
Application No. 08/815,410

Murata et al. (Murata '957) (EP) 0 523 957 Jan. 20, 1993

Claims 6-8 and 10-12 stand rejected under 35 U.S.C. § 103 as being unpatentable over Schwalm '265, and claims 9 and 10 are correspondingly rejected over this reference and further in view of Yamada.

Claims 6-8, 10 and 11 stand rejected under 35 U.S.C. § 103 as being unpatentable over Nguyen-Kim in view of Schwalm '037, and claims 8-10 are correspondingly rejected over these references and further in view of Yamada.

Claims 6-12 stand rejected "under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-10, 16, 17 and 19-22 of U.S. Patent No. 5,624,787 (US'787) [Watanabe '787] in view of EP '426 [Yamada] with either EP 0523957 (EP'957) [Murata '957] or US 5,580,695 (Murata) [Murata '695]" (answer, page 12).

Finally, claims 6-8, 11 and 12 stand rejected "under the judicially created doctrine of double patenting over claims 1-7 of U.S. Patent No. 5,691,112 (US'112) [Watanabe '112] since the claims, if allowed, would improperly extend the 'right to

Appeal No. 1999-2119
Application No. 08/815,410

appellants and by the examiner concerning the above noted rejections.

As reflected on page 4 of the brief, the appealed claims have been grouped in accordance with their groupings in the rejections before us, although the section 103 rejection of claims 8-10 and the section 103 rejection of claims 9 and 10 have not been separately argued with any reasonable specificity. Thus, in assessing the merits of these rejections, we need focus only on claim 6 which is the sole independent claim on appeal.

Moreover, as indicated on pages 1 and 2 of the brief, the above identified application is related to co-pending application Serial No. 08/192,903 which is also on appeal (Appeal No. 97-0363). We presume familiarity with our decision on appeal of the related application. Toward that end, a copy of the aforementioned decision is attached hereto.

OPINION

For the reasons which follow, we will sustain each of the examiner's section 103 rejections as well as her obviousness-type double patenting rejection based on Watanabe '787. However, we

Appeal No. 1999-2119
Application No. 08/815,410

The section 103 rejections based on Schwalm '265

We agree with the examiner that it would have been prima facie obvious for one with ordinary skill in the art to formulate the resist material of Schwalm '265 with onium salts that include substituents of the type here claimed since these substituents are among the choices disclosed by Schwalm as yielding compounds which would be reasonably expected to possess the desired properties. See Merck & Co., Inc. v. Biocraft Labs., 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir. 1989) and In re O'Farrell, 853 F.2d 894, 904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988).

In support of their contrary view, the appellants argue that Schwalm '265 "fails to teach a practical process by which the onium salts of appellants' invention could be prepared" (brief, page 12). As indicated in our decision on the related appeal, however, the issue is not whether Schwalm '265 discloses a "practical process" for making the onium salts under consideration. Instead, the issue is whether the disclosure of this reference would enable an artisan with ordinary skill to

Appeal No. 1999-2119
Application No. 08/815,410

the issue is whether the prior art includes a process capable of manufacturing these onium salts regardless of whether such a process is practical or impractical.

In the Watanabe declaration of record, executed November 25, 1997, a very small number of prior art processes were practiced in an attempt to show that certain onium salts of the type under consideration could not be practically produced and/or isolated. Plainly, this declaration evidence falls far short of establishing that the mono and di substituted onium salts encompassed by the generic disclosure of Schwalm '265 were impossible to manufacture with any of the processes known in the prior art.¹ For these reasons and those expressed in our decision on the related appeal, we are unpersuaded by the argument under review.

The appellants also argue that the resist material of Schwalm '265 includes disulfone compounds which are excluded by the "consisting essentially of" language of the independent claim on appeal.² The examiner, on the other hand, does not consider

Appeal No. 1999-2119
Application No. 08/815,410

this claim language to exclude such disulfones. We agree with the examiner.

As both the appellants and the examiner seem to appreciate, the claim phrase "consisting essentially of" limits the scope of a claim to the specified ingredients and those that do not materially affect the basic and novel characteristics of the claimed composition. In re Janakirama-Rao, 317 F.2d 951, 954, 137 USPQ 893, 896 (CCPA 1963). Moreover, under circumstances of the type here in question, it is appropriate that an applicant carry the burden of providing evidence in support of his argument that a prior art ingredient affects the basic and novel characteristics of his claimed composition and thus is excluded by his "consisting essentially of" claim language. In re De Lajarte, 337 F.2d 870, 874, 43 USPQ 256, 258 (CCPA 1964); also see In re Herz, 537 F.2d 549, 551, 190 USPQ 461, 463 (CCPA 1976).

In an apparent attempt to carry this burden, the appellants proffer the § 1.132 declaration of record by Watanabe, executed July 5, 1996, wherein inventive resist materials with and without disulfone were compared. According to the appellants, the

Appeal No. 1999-2119
Application No. 08/815,410

From our perspective, the principal and fatal deficiency of this declaration evidence constitutes its extremely narrow scope relative to appealed independent claim 6. For example, the resist material tested in the declaration included only 4-t-butoxyphenyl substituted sulfonium salt whereas claim 6 encompasses an exceptionally large number of onium salts having widely varying substituents. The extreme variation in the chemical structures of such salts reasonably supports the proposition that these salts also possess widely varying properties. Similarly, the declaration comparison involved only one disulfone, namely, diphenylsulfone whereas the disulfones of Schwalm '265 include a huge number and variety of compounds.

It is apparent that the declaration evidence under consideration cannot be regarded as representing the here claimed resist materials including the onium salts of appealed claim 6 as a class or as representing the disulfone compounds of Schwalm '265 as a class. Compare, for example, In re Susi, 440 F.2d 442, 445-46, 169 USPQ 423, 426 (CCPA 1971). For all we know, the declaration results are atypical, and the properties of other

Appeal No. 1999-2119
Application No. 08/815,410

cannot be accepted as establishing that (1) these disulfones would materially affect the basic and novel characteristics of the here claimed resist materials and thus (2) are excluded by the "consisting essentially of" claim language.

Finally, it is the appellants' position that their declaration evidence of record establishes that the here claimed resist materials, by virtue of onium salts having only one or two t-alkoxy substituted phenyl groups, exhibit unexpected results compared to resist materials having tris substituted onium salts of the type exemplified by Schwalm '265. Again, however, this declaration evidence is extremely narrow in scope relative to the scope of the independent claim on appeal. For example, the inventive compositions in all of these declarations involve only 4-t-butoxyphenyl substituted onium salts. The appellants' independent claim, however, undeniably encompasses an exceptionally large number and variety of mono and di substituted onium salts having only one or two t-alkoxy substituted phenyl groups.

As explained in our decision on the related appeal, evidence

Appeal No. 1999-2119
Application No. 08/815,410

617 F.2d 272, 278, 205 USPQ 215, 220-221 (CCPA 1980); In re Lindner, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972).

Because the scope of the unexpected results evidence proffered by the appellants is considerably more narrow than the scope of appealed independent claim 6, this evidence is insufficient to rebut or outweigh the prima facie case of obviousness established by the reference evidence supplied by the examiner.

In light of the foregoing, we will sustain the examiner's section 103 rejection of claims 6-8 and 10-12 as being unpatentable over Schwalm '265 as well as the uncontested section 103 rejection of claims 9 and 10 as being unpatentable over this reference and further in view of Yamada.

The section 103 rejections based on Nguyen-Kim

We agree with the examiner's basic position that it would have been prima facie obvious for an artisan with ordinary skill to replace the sulfonium salts in the resist materials of Nguyen-Kim with the mono or di sulfonium salts encompassed by the general formula of Schwalm '037, thereby resulting in a resist material containing onium salts of the type defined by the

Appeal No. 1999-2119
Application No. 08/815,410

resist materials having such salts are unexpectedly superior to resist materials containing tris substituted sulfonium salts exemplified in the references applied by the examiner. In essence, the argument and evidence advanced by the appellants concerning the rejection under review correspond to the argument and evidence discussed above. We consider this argument and evidence unconvincing for the reasons set forth above and in our attached decision.

As a consequence, we also will sustain the examiner's section 103 rejection of claims 6-8, 10 and 11 as being unpatentable over Nguyen-Kim in view of Schwalm '037 as well as the uncontested section 103 rejection of claims 8-10 over these references and further in view of Yamada.

The obviousness-type double patenting rejection

Concerning this rejection, the examiner concludes, inter alia, that, "[s]ince the nitrogenous compounds recited in US'787 [i.e., recited in the claims of Watanabe '787] and their effects are well-known in the art, the omission of said nitrogenous compounds with the consequent loss of their known effects in the

Appeal No. 1999-2119
Application No. 08/815,410

ordinary skill in the art to modify the teachings [i.e., the claim teachings] of Watanabe '787 to provide resist compositions absent a nitrogenous compound" because "[d]espite what the secondary references may teach, modification of [the claimed subject matter of] Watanabe '787 in this manner would be completely contrary to the reference objectives and one of ordinary skill in the art would have no motivation to make such a modification" (brief, page 18). Unlike the appellants, we perceive merit in the examiner's position.

The examiner's conclusion is supported by well established case law reflecting that it would have been obvious for one of ordinary skill in the art to eliminate a component of a prior art composition along with its attendant function. In re Thompson, 545 F.2d 1290, 1294, 192 USPQ 275, 277 (CCPA 1976); In re Kuhle, 526 F.2d 553, 555, 188 USPQ 7, 9 (CCPA 1975); In re Marzocchi, 456 F.2d 790, 793, 173 USPQ 228, 229-30 (CCPA 1972); In re Edge, 359 F.2d 896, 899, 149 USPQ 556, 557 (CCPA 1966). Moreover, contrary to the appellants' belief, the artisan would have been motivated to eliminate the nitrogenous component of the

Appeal No. 1999-2119
Application No. 08/815,410

artisan would have considered this cost reduction to be particularly desirable for resists which need not possess the high sensitivity and resolution that is achieved via Watanabe's nitrogenous compounds.

As an alternative position which is independent of her obviousness conclusion discussed above, the examiner contends that the appellants' "consisting essentially of" claim language does not exclude the nitrogenous compounds recited in the claims of Watanabe '787 (e.g., see page 41 of the answer as well as page 13 of the last Office action (i.e., Paper No. 18) mailed March 18, 1998). From our perspective, this last mentioned position also has merit. For this reason and because the appellants have not specifically contested this position in their brief or reply brief, we accept the position as well taken.

As a consequence of these circumstances, we will sustain the examiner's rejection of claims 6-12 under the judicially created doctrine of obviousness-type double patenting over claim 8-10, 16, 17 and 19-22 of Watanabe '787 in view of Yamada with either Murata '957 or Murata '695.

Appeal No. 1999-2119
Application No. 08/815,410

disclosed in US`112 [i.e., Watanabe `112] and is covered by the claims of US`112 [i.e., Watanabe `112]" and that "identical subject matter is claimed" (answer, page 42). Notwithstanding the examiner's aforequoted statement that "identical subject matter is claimed," this double patenting rejection plainly is not the "same invention" type under 35 U.S.C. § 101. In re Vogel, 422 F.2d 438, 441, 164 USPQ 619, 621-22 (CCPA 1970). Further, we do not believe that the examiner considers this double patenting rejection to be the "same invention" type.

Instead, this rejection appears to be premised upon the examiner's view that claim 3 of Watanabe `112 could be broadly interpreted as dominating the here claimed invention. It is well settled, however, that domination by itself cannot support a double patenting rejection. In re Kaplan, 789 F.2d 1574, 1577, 229 USPQ 678, 681 (Fed. Cir. 1986); In re Sarett, 327 F.2d 1005, 1014, 140 USPQ 474, 482 (CCPA 1964). Further, on the record before us, the examiner has not, in our view, carried her burden of showing that the patent protection afforded by claim 3 of Watanabe `112 would be unjustifiably extended by allowance of the

Appeal No. 1999-2119
Application No. 08/815,410

for example, the Manual of Patent Examining Procedure (MPEP) at section 804 and especially at section 804 II. B.2 on pages 804-21 and 804-22 (July 1998).

For these reasons, we will not sustain the examiner's double patenting rejection of appealed claims 6-8, 11 and 12 over claims 1-7 of Watanabe '112.

Summary

The decision of the examiner is affirmed.

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

AFFIRMED

| | | |
|-----------------------------|---|-----------------|
| Edward C. Kimlin |) | |
| Administrative Patent Judge |) | |
| |) | |
| |) | |
| |) | |
| Bradley R. Garris |) | BOARD OF PATENT |
| Administrative Patent Judge |) | APPEALS AND |
| |) | INTERFERENCES |
| |) | |
| |) | |
| Romulo H. Delmendo |) | |

Appeal No. 1999-2119
Application No. 08/815,410

Millen, White, Zelano and Branigan
Arlington Courthouse Plaza I
Suite 1400
2200 Clarendon Boulevard
Arlington, VA 22201