

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. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MASAYUKI YAMANA
and
TSUKASA AGA

Appeal No. 2000-0482
Application 08/569,256

HEARD: February 19, 2002

Before KIMLIN, WALTZ, and POTEATE, **Administrative Patent Judges**.

POTEATE, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's refusal to allow claims 1, 3, 5 and 7-10, which are all of the claims remaining in the application.

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

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1. An abherent composition comprising

(A) at least one compound selected from the group consisting of phosphate ester or salt thereof, a phosphonic acid derivative, and a phosphinic acid derivative, having at least one C₄-C₂₀ perfluoro-alkyl or alkenyl group,

(B) polytetrafluoroethylene having a number-average molecular weight of 50,000 to 500,000, and

(C) at least one compound selected from the group consisting of a silicone oil, a silicone resin and a highly fluorinated compound having a boiling point of at least 100°C wherein compound (C) is not a compound of (A) or (B).

The references relied upon by the examiner are:

Horiuchi et al. (Horiuchi)	4,118,235	Oct. 3, 1978
Hisamoto et al. (Hisamoto)	5,079,299	Jan. 7, 1992
Wagner	5,464,586	Nov. 7, 1995
Fukui et al. (JP '035)	57-048035	Oct. 13, 1982
Amimoto et al. (JP '312)	01-285312	Nov. 16, 1989 ¹

Claims 1, 3, 5 and 7-10 are rejected under 35 U.S.C. § 103(a) as unpatentable over Horiuchi, Hisamoto, JP '312 and JP '035 in view of Wagner.² For the reasons discussed below, the rejection is affirmed.

¹We rely upon and cite from a full English translation of the JP '035 and JP '312 documents, previously made of record.

²Dependent claims 3, 5 and 7-10 stand or fall together with independent claim 1. Appeal Brief, Paper No. 19, received May 25, 1999, page 3, paragraph (8).

BACKGROUND

The present invention is directed to an adherent composition which may be utilized as a mold release agent, an anti-blocking agent and a stripping agent for electrical wire. Appeal Brief, page 6. Conventional mold release agents include natural or synthetic compounds such as silicone oil, mineral oil, paraffin wax, fatty acid derivatives and glycols and inorganic materials such as talc and mica. Specification, page 2, lines 4-8. According to the inventors, these conventional mold release agents suffer from various drawbacks such as insufficient mold releasability. Specification, page 2, line 4-page 3, line 4. They are also ineffective as stripping agents and anti-blocking agents. Specification, page 3, lines 5-15.

DISCUSSION

The initial burden of presenting a **prima facie** case of obviousness rests on the examiner. **In re Oetiker**, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

[A] proper analysis under § 103 requires, **inter alia**, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed

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composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success. Both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the applicant's disclosure.

In re Vaeck, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991) (citation omitted).

The examiner relies on each of the primary references as disclosing a mold release composition comprising one or more of components A and C³ of the claimed invention. Examiner's Answer, Paper No. 20, mailed July 27, 1999, page 3, paragraph (10). The examiner acknowledges that the primary references do not disclose component B, i.e., a polytetrafluoroethylene (PTFE) having a number-average molecular weight of 50,000 to 500,000. However, the examiner maintains that it would have been obvious to have used component B in the compositions of the primary references in view of Wagner which discloses a PTFE release agent having a molecular weight of 30,000 to 200,000.

³See claim 1 for recitations of components A, B and C.

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Having considered the teachings of each of the primary references, we find that the strongest arguments against patentability are based on the teachings of Horiuchi in view of Wagner. Therefore, we limit our discussion to these two references.

"Horiuchi '235 discloses a mold release agent having a composition, which contains a perfluoroalkyl group containing phosphoric acid ester, a non-curable polysiloxane or a highly fluorinated organic compound and a liquid carrier." Appeal Brief, page 8. Horiuchi further teaches that "[t]he mold release agent of the invention may be added, if desired, with powder of silicon oxide, polytetrafluoroethylene, fluorinated carbon or the like in order to improve mechanical strengths of a film obtained by application of the mold release agent. . . ." Appeal Brief, page 9 (quoting Horiuchi, column 6, lines 42-48). Horiuchi does not disclose the use of polytetrafluoroethylene (PTFE) having the specific molecular weight range recited in claim 1. Appeal Brief, page 9.

"Wagner '586 teaches a combination of PTFE and a mineral filler, which is a combination of two solids to comprise a mold release agent." Appeal Brief, page 13. Wagner teaches that:

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[p]olytetrafluoroethylene is known as a slip agent and lubricant and as a substance with a release effect in many fields of use. So-called polytetrafluoroethylene micro-powders (also called "polytetrafluoroethylene waxes") are particularly preferred according to the invention. These low-molecular-weight polytetrafluoroethylenes generally have a molecular weight of 30,000-200,000 and an average particle size of 1 to 20 μm .

Wagner, column 2, line 66-column 3, line 6. The mineral fillers utilized by Wagner include known slip and release agents such as talc, kaolin and mica. Id. at column 3, lines 33-35. Wagner further notes that the effectiveness of the PTFE can be increased by using silicone oils. Id. at column 3, lines 23-25.

It is the examiner's position that one of ordinary skill in the art would have been motivated to utilize the low molecular weight PTFE of Wagner in the compositions of Horiuchi to obtain further improvements in release properties of the Horiuchi composition. Appellants argue that "Horiuchi '235 fails to suggest or provide motivation" to utilize the low molecular weight PTFE disclosed in Wagner in the Horiuchi composition since Horiuchi's test results demonstrate that improved releasability is not attained when PTFE is included in the composition, i.e., there would be no reasonable expectation of enhanced releasability. Appeal Brief, pages 9-10. This argument is

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unpersuasive since Horiuchi's experiments do demonstrate that the lifetime of the release agent is increased by the addition of PTFE, thus providing motivation to include PTFE in the compositions of Horiuchi to extend the life thereof. See Examiner's Answer, pages 3-4, referencing Tables 10 and 11, experiments 6 and 4. **See *In re Kronig***, 539 F.2d 1300, 1304, 190 USPQ 425, 427-28 (CCPA 1976) (obviousness does not require that references be combined for the reasons contemplated by the inventor, rather, all that is required is that the prior art as a whole provides some motivation or suggestion to combine the references).

Appellants further argue that:

[t]here is no teaching in Wagner '586 to suggest the preferential use of only PTFE without a filler. As a result, there is no motivation for one skilled in the art to combine the teachings of Wagner '586 with those of the primary references, since there is no suggestion in Wagner '586 of using PTFE without the mineral filler.

Appeal Brief, page 13. In addition, Appellants suggest that one of ordinary skill in the art would not have been motivated to combine the teachings of Horiuchi and Wagner since Horiuchi only teaches the use of PTFE to impart hardness to the film and not to act as a mold release agent. Appeal Brief, pages 9-10. Neither

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of these arguments is persuasive. Claim 1 uses the term "comprising" and, therefore, does not exclude additional unrecited elements such as mineral fillers. **Moleculon Research Corp. v. CBS, Inc.**, 793 F.2d 1261, 1271, 229 USPQ 805, 812 (Fed. Cir. 1986), **cert. denied**, 479 U.S. 1030 (1987). The claims are also not limited to the use of PTFE strictly as a release agent. **See In re Mraz**, 455 F.2d 1069, 1072-73, 173 USPQ 25, 27-28 (CCPA 1972). Accordingly, we find that the examiner has established a **prima facie** case of obviousness.

A **prima facie** case of obviousness may be rebutted if the appellant (1) establishes unexpected properties in the claimed composition or (2) shows that the art, in any material respect, teaches away from the claimed invention. **In re Malagari**, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). Appellants rely on the Yamaguchi Declaration under 37 CFR § 1.132 (Paper No. 16, received January 25, 1999) as providing evidence of unexpected results. The examiner found that appellants' evidence was not sufficient to demonstrate a synergistic effect of the claimed composition since appellants failed to make a showing of unexpected results commensurate in scope with the claims. Examiner's Answer, page 5. We agree. **See In re Dill**,

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604 F.2d 1356, 1361, 202 USPQ 805, 808 (CCPA 1979) ("The evidence presented to rebut a **prima facie** case of obviousness must be commensurate in scope with the claims to which it pertains.")

A showing of unexpected results must represent a comparison between the claimed invention and the closest prior art. ***In re Baxter Travenol Labs***, 952 F.2d 388, 392, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991). Appellants concede that Horiuchi discloses a mold release agent containing components A and C. Appeal Brief, page 8. Appellants further agree that Horiuchi teaches a composition containing PTFE. However, appellants note that Horiuchi fails to disclose a specific molecular weight for the PTFE used in the composition. Appeal Brief, pages 8-9. According to appellants, "the present invention includes PTFE in a specific molecular weight range (50,000-500,000) with the object of creating an enhanced synergistic effect for superior mold release properties." Appeal Brief, page 9. However, the proof of unexpected results is limited to a single species within the claimed range, i.e., a PTFE having a molecular weight of 200,000. See, Yamaguchi Declaration, page 2, Experiment 1. While the declaration does include a comparison of the claimed

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composition with compositions containing only components A and C, there are no examples wherein the claimed composition is compared with a composition containing components A, C and a PTFE having a molecular weight outside the claimed range. Where, as here, the appellant is relying on a claimed critical range to define over the prior art, he must demonstrate that the results of optimizing the molecular weight of the PTFE are unexpectedly good. **See *In re Antonie***, 559 F.2d 618, 620, 195 USPQ 6, 8 (CCPA 1977) (“[I]t is not inventive to discover the optimum or workable ranges by routine experimentation.”) **See also, *In re Best***, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977) (“Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product.”)

Appellants also assert that Wagner teaches away from combining low molecular weight PTFE with other release agents, except mineral fillers, based on Wagner’s disclosure that while “[t]he effectiveness of the polytetrafluoroethylene can frequently be increased by also using silicone oils . . . this

is not absolutely desirable from environmental points of view." Appeal Brief, pages 7-8 (quoting Wagner, column 3, lines 22-32). "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, . . . would be led in a direction divergent from the path that was taken by the applicant." ***In re Gurley***, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994). While the referenced passage in Wagner might discourage some from utilizing PTFE in combination with silicone oils, others would likely find that the increased effectiveness provided by the combination would outweigh possible additional process steps or precautions needed to address environmental concerns. ***See In re Farrenkopf***, 713 F.2d 714, 718, 219 USPQ 1, 4 (Fed. Cir. 1983) ("That a given combination would not be made by businessmen for economic reasons does not mean that persons skilled in the art would not make the combination because of some technological incompatibility. Only the latter fact would be relevant.") (citation omitted).

Accordingly, we find that appellants have failed to rebut the examiner's ***prima facie*** case of obviousness. The rejection is affirmed.

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TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 35 CFR § 1.136(a).

AFFIRMED

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
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THOMAS A. WALTZ)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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