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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex AMIR HOSSAIN PARHAM, ARNE BUESING,
CHRISTOF PFLUMM, TERESA MUJICA-FERNAUD,
PHILIPP STOESSEL, THOMAS EBERLE, and FRANK VOGES

Appeal 2019–002324
Application 15/676,100
Technology Center 1700

Before KAREN M. HASTINGS, BRIAN RANGE, and
JANE E. INGLESE, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant¹ requests our review under 35 U.S.C. § 134(a) of the Examiner’s decision rejecting claims 18, 19 and 21–43 under 35 U.S.C. § 103 as unpatentable over at least the combined prior art of Yabunouchi (US 2006/0159957 A1, pub. July 20, 2006), Lupo (US 5,840,217, iss. Nov. 24, 1998), and Akai (US 2010/0258789 A1, pub. Oct. 14, 2010).²

¹ We use the word “Appellant” to refer to the “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies Merck Patent GmbH as the real party in interest (Appeal Br. 2).

² The additional references applied to dependent claims 33, 35, 37, 39, and 41 are Thelakkat (Thelakkat et al, SYNTHESIS AND PROPERTIES OF

We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM IN PART.

CLAIMED SUBJECT MATTER

Claim 18 is illustrative of the subject matter on appeal and is directed to a compound (*see*, Appeal Br., Claims Appendix 15–17 for the detailed compound formula). As explained in the Specification, this compound is used in an electronic device, in particular in an organic electroluminescent device (Spec. 1:1-28).

Appellant’s arguments mainly focus on independent claim 18 (*see generally* Briefs). To the extent Appellant presents separate remarks for rejections of the dependent claims, these will be addressed below.

OPINION

Upon consideration of the evidence of record and each of Appellant’s contentions as set forth in the Appeal Brief (filed Sept. 6, 2018, hereinafter “Appeal Br.”), as well as the Reply Brief (filed Jan. 28, 2019, hereinafter “Reply Br.”), we determine that Appellant has not demonstrated reversible error in the Examiner’s rejections of claims 18, 19 and 21–31, and 33–43 (e.g., *see generally* Ans.). *In re Jung*, 637 F.3d 1356, 1365–66 (Fed. Cir. 2011) (explaining the Board’s long-held practice of requiring Appellant(s) to identify the alleged error in the Examiner’s rejection). We sustain the

NOVEL HOLE TRANSPORT MATERIALS FOR ELECTROLUMINESCENT DEVICES, Macromol. Symposium, Vol. 125, 157–164 (1997), hereinafter “Thelakkat”) and Thelakkat 1997 (e.g., Ans. 8, 9). A discussion of these references is not needed for disposition of this appeal

rejections of these claims generally for the reasons expressed by the Examiner in the Final Office Action (mailed April 6, 2018, hereinafter “Final Action”) and the Examiner’s Answer (mailed Nov. 29, 2018, hereinafter “Ans.”). On the other hand, the Examiner’s rejection as to claim 32 is reversed.

We add the following primarily for emphasis.

It has been established that the predictable use of known prior art elements performing the same functions they have been known to perform is normally obvious, and the combination of familiar elements is likely to be obvious when it does no more than yield predictable results. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (“[T]he [obviousness] analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”); *see also In re Fritch*, 972 F.2d 1260, 1264–65 (Fed. Cir. 1992) (a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in the art would have reasonably been expected to draw therefrom).

Appellant’s main contention focuses on a lack of a sufficient reason to use the spirobifluorenyl group as found in Lupo’s and Akai’s electroluminescent compounds to replace the fluorenyl group in Yabunouchi’s electroluminescent compound (Appeal Br. 8; *see also* Reply Br. 2, 3). Appellant takes issue with the Examiner’s stated reason which is to increase the compound’s glass transition temperature and/or lower its tendency to crystallize (as explained by the Final Action 5, 7), in part because Yabunouchi already “appears to strike a balance” between high

glass transition temperature and low tendency to crystallize (Appeal Br. 8; *see also* Reply Br. 2, 3).³ Appellant also argues that there is no reasonable expectation of success or motivation to use the group on the 1, 3, or 4 position versus the 2 position taught in Yabunouchi based on the teachings of the references (Appeal Br. 8; *see also* Reply Br. 5, 6). Appellant’s arguments are not persuasive of reversible error for reasons presented by the Examiner (Ans. 9–11).

As pointed out by the Examiner, both Lupo and Akai exemplify the use of a spirobifluorenyl group as an alternative to a fluorenyl group in an electroluminescent compound and teach advantages of such a substitution (e.g., Ans. 5, 6; *see also* Final Action 5). We agree with the Examiner that the electroluminescent compound in claim 18 is *prima facie* obvious over Yabunouchi’s compound modified to have spirobifluorenyl groups and that such groups may be located at any of the recited positions because the claimed compound and Yabunouchi’s modified to have spirobifluorenyl groups as a known alternative to fluorenyl groups have substantially similar chemical structures and are used for the same purpose (electroluminescent compounds). *See In re Payne*, 606 F.2d 303, 313-14 (CCPA 1979) (When the prior art compound (a prior art ring structure having one or three carbon atoms between two sulfur atoms) and the claimed compound (the claimed ring structure having two carbon atoms between two sulfur atoms) are structurally similar and are used for the same purpose (pesticidal), the required motivation to make the claimed compound is present.)

As stated in *KSR*, 550 U.S. at 419–20, the Supreme Court stated that:

³ We shall assume without deciding that Appellant is correct that Yabunouchi alone does not suggest bispirofluorene groups (Reply. Br. 4).

In determining whether the subject matter of a . . . claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim. If the claim extends to what is obvious, it is [unpatentable] under § 103. One of the ways in which a patent’s subject matter can be proved obvious is by noting that there existed at the time of [the] invention a known problem for which there was an obvious solution encompassed by the patent’s claims.

“The Supreme Court’s decision in *KSR* . . . directs us to construe the scope of analogous art broadly, stating that ‘*familiar items may have obvious uses beyond their primary purposes*, and a person of ordinary skill often will be able to fit the teachings of multiple patents together like pieces of a puzzle.’” *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1238 (Fed. Cir. 2010) (quoting *KSR*, 550 U.S. at 420).

It is well established that prior art references must be considered in its entirety, i.e., as a whole, when determining obviousness. One of ordinary skill in the art would have inferred and readily appreciated that a known alternative group of spirobifluorenyl versus fluorenyl in the electroluminescent compound of Yabunouchi would have been obvious as explained by the Examiner.

Likewise, Appellant’s arguments regarding the lack of motivation to combine the cited art are also unpersuasive for the reasons given above. That is, the arguments fail to account for “the inferences and creative steps that a person of ordinary skill in the art would employ.” *See KSR*, 550 U.S. at 418; *see also cf., In re Beattie*, 974 F.2d 1309, 1312 (Fed. Cir. 1992) (“[T]he law does not require that the references be combined for the reasons

contemplated by the inventors.”); and *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

We believe that the Examiner has correctly applied the standard of 35 U.S.C. § 103 in finding the structural relationship between the claimed compound and Yabunouchi’s compound as modified in accordance with established obviousness guidelines, to be so close that the former would be prima facie obvious over the latter. *See also In re Wood*, 582 F.2d 638, 641, (CCPA 1978) (Because of the close structural similarity between the claimed compounds at issue here and the compounds of Addor I, II, and III, Ghosh, and Nikles, and because those prior art compounds possess pesticidal activity, we conclude that the required motivation is present here.); *see also In re Gyurik*, 596 F.2d 1012, 1018 (CCPA 1979) (When the similarity in chemical structures and functions between the prior art and claimed compounds is sufficiently close, a prima facie case of obviousness is established.); *see also Application of Albrecht*, 514 F.2d 1385, 1388 (CCPA 1975); and *In re Murch*, 464 F.2d 1051, 1054 (CCPA 1972).

Finally, the Examiner reasonably determined that one of ordinary skill in the art may place the group on any available position, including the 1 position (claim 42 and the 4 position (claim 43). Appellant has not shown otherwise with sufficient technical reasoning or credible evidence. Rather, Appellant states for the first time in the Reply Brief that the Specification examples do show an improvement in properties from the 3 position over the 2 position (Reply Br. 15). However, none of the claims appear to be limited to the groups being located on the 3 position.

It has been established that obviousness does not require absolute predictability of success; all that is required is a reasonable expectation of

success. *In re Kubin*, 561 F.3d 1351, 1360 (Fed. Cir. 2009). Furthermore, inasmuch as the bispirofluorene groups were known in the art as suitable for an electroluminescent compound, it is incumbent upon Appellant to establish that the present inventors had to resort to more than routine experimentation to determine if it would have been effective in a compound of the type taught in Yabunouchi. However, no such evidence is of record.

Thus, Appellant has not shown reversible error in the Examiner’s obviousness determination of claims 18, 42, and 43. *See KSR*, 550 U.S. at 417 (the predictable use of known prior art elements or steps performing the same functions they have been known to perform is normally obvious; the combination of familiar elements/steps is likely to be obvious when it does no more than yield predictable results); *see also In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (“Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.”); and *In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983) (“[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review.”).

Accordingly, we sustain the Examiner’s rejection of independent claim 18, and separately argued dependent claims 42 and 43, as well as all claims dependent that are not separately argued thereon (that is, claims 21–31, and 33–41).

On the other hand, the Examiner does not respond to Appellant’s specific argument regarding the process for preparing the compound of claim 18 set out in claim 32 (Appeal Br. 11, 12; *see also generally* Ans.). In

light of these circumstances, we are constrained to reverse the Examiner’s rejection of claim 32.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
18, 19, 21–32, 34, 36, 38, 40, 42, 43	103	Yabunouchi, Lupo, Akai	18, 19, 21–31, 34, 36, 38, 40, 42, 43	32
33, 35, 37, 39, 41	103	Yabunouchi, Lupo, Akai, Thelakkat, Thelakkat 1997	33, 35, 37, 39, 41	
Overall Outcome			18, 19, 21–31, 33–43	32

TIME PERIOD FOR RESPONSE

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).

AFFIRMED IN PART