



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
12/941,571 11/08/2010 Peter J. Krebs 39073/398129 1006

23370 7590 10/31/2016
KILPATRICK TOWNSEND & STOCKTON LLP
Mailstop: IP Docketing - 22
1100 PEACHTREE STREET
SUITE 2800
ATLANTA, GA 30309

EXAMINER

THOMAS, TIMOTHY P

ART UNIT PAPER NUMBER

1628

NOTIFICATION DATE DELIVERY MODE

10/31/2016

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipefiling@kilpatricktownsend.com
jlhice@kilpatrick.foundationip.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PETER J. KREBS, ALLISON KREBS-BENSCH, and
JEROME W. MINCY¹

Appeal 2014-000048²
Application 12/941,571
Technology Center 1600

Before ULRIKE W. JENKS, ROBERT A. POLLOCK, and
TAWEN CHANG, *Administrative Patent Judges*.

JENKS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) involving claims to an iron supplement, which the Examiner has rejected as obvious. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ According to Appellants, the real party in interest is U.S. Pharmaceuticals Corporation. (App. Br. 3.)

² An oral hearing was held on Oct. 4, 2016.

STATEMENT OF THE CASE

Claims 1 and 4 are on appeal³, and can be found in the Claims Appendix of the Appeal Brief. Claim 1 is representative of the claims on appeal, and reads as follows:

1. An orally administrable iron supplement composition for treatment or prophylaxis of iron deficiency, comprising:
an effective amount of ferrous fumarate; and
an effective amount of polysaccharide iron complex,
wherein the polysaccharide iron complex comprises from about 38 wt% to about 46 wt% iron, and
wherein the amount of iron derived from the ferrous fumarate is the same as the amount of iron derived from the polysaccharide iron complex.

(App. Br. 37, Claims Appendix.)

Appellants request review of the Examiner's rejection of claims 1 and 4 under 35 U.S.C. § 103(a) as unpatentable over Hermelin⁴ in view of Liu,⁵ Coe,⁶ and Montgomery.⁷

The issues with respect to this rejection are: (i) Does the evidence of record support the Examiner's conclusion that the prior art renders the claims prima facie obvious? (ii) If so, have Appellants presented evidence of

³ Claims 5–7, 10, and 13–15 are withdrawn from consideration. (App. Br. 5).

⁴ Hermelin et al., US 2003/0190355 A1, published Oct. 9, 2003 (“Hermelin”).

⁵ Liu et al., *Comparison of a Combination Ferrous Fumarate Product and a Polysaccharide Iron Complex as Oral Treatments of Iron Deficiency Anemia: A Taiwanese Study*, 80 Int. J. Hematology 416–420 (2004) (“Liu”).

⁶ Coe et al., *Comparison of Polysaccharide Iron Complexes Used as Iron Supplements*, 57 J. Inorg. Biochem. 287–292 (1995) (“Coe”).

⁷ Montgomery et al., US 3,821,192, issued June 28, 1974 (“Montgomery”).

secondary considerations, that when weighed with the evidence of obviousness, is sufficient to support a conclusion of non-obviousness?

Findings of Fact

We adopt the Examiner's findings of fact and reasoning regarding the scope and content of the prior art as set out in the Final Action⁸ and Answer. For emphasis only we highlight the following:

- FF1. Hermelin teaches that “administration of a high dose of poorly absorbed iron complexes may cause siderosis of the gut wall and a variety of side effects such as nausea” in addition to other ailments (Hermelin ¶ 8).
- FF2. Hermelin teaches compositions containing “at least two iron-providing materials in a single dosage form wherein at least one of the iron-providing materials contains a modified release mechanism, matrix, or coating” (Hermelin, Abstract). The “combination provides both an initial absorption of iron and a prolonged absorption of iron over time upon administration to a patient” (*id.* at ¶ 9).
- FF3. Hermelin teaches using soluble iron salt selected from a group that includes “ferrous fumarate” (*id.* at ¶ 40).
- FF4. Hermelin teaches using iron complexes including among others a polysaccharide iron complex (PIC) (*id.* at ¶ 43).
- FF5. Hermelin exemplifies two compositions containing two different iron sources in each formulation (*see id.* at ¶¶ 83–87, and claims 1, 2, 11). Specifically, examples 1 and 3 of Hermelin include ferrous fumarate and micromask carbonyl iron (*see id.* at ¶¶ 83 and 87).

⁸ Office Action mailed Jan. 10, 2013 (“Final Act.”).

FF6. Liu teaches treating patients with ferrous fumarate iron supplement or a ferric iron polysaccharide complex (Liu, Abstract). Specifically, Liu “compared a combination ferrous iron product (Ferall) with a ferric polysaccharide complex product (Niferex) as oral treatment of iron deficiency anemia in our patient population” (*id.* at 417). “Both iron supplements . . . raised mean hemoglobin level over the course of the 12-week study Both iron supplements were well tolerated, no patients withdrawing from the study for a GI reason or for any other type of self-reported adverse event” (*id.* at 419).

FF7. Montgomery teaches the production of iron complexes having “between 40 and 46 percent iron” (Montgomery col. 1, ll. 44–45). Montgomery compared the absorption of ferrous sulfate and iron-dextrin, and concludes that “iron from the iron-dextrin compound is at least as absorbable as iron from ferrous sulfate” (*id.* at col. 4, ll. 10–12).

Principle of Law

“The combination of familiar elements according to known methods 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, 416 (2007).

It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose. . . . [T]he idea of combining them flows logically from their having been individually taught in the prior art.

In re Kerkhoven, 626 F.2d 846, 850 (CCPA 1980)(citations omitted).

Analysis

The Examiner acknowledges that Hermelin alone “would require picking and choosing to arrive at the combination of PIC iron complex and applicant[s] elected ferrous fumarate” (Final Act. 5; Ans. 4; FF1–FF5). The Examiner finds that “Hermelin features ferrous fumarate in two of three Example formulations, motivating selection of this iron source; combination of this component with PIC, from the species recited in claim 11 would have been obvious; i.e., selection of two iron species for a two-iron component single dose combination” (Ans. 6). In other words, Hermelin’s exemplified formulations would lead the ordinary artisan to select ferrous fumarate as the soluble iron salt narrowing the source of the other iron-providing material for the composition (*see* Hermelin ¶ 39; FF3 & FF5). The Examiner acknowledges that PIC is but one of the iron complexes named in a list (*see* Ans. 4). However, picking and choosing among various options is entirely proper the context of an obviousness rejection. *See In re Arkley*, 455 F.2d 586, 587–588 (CCPA 1972). Additionally, the Examiner does not stop with the Hermelin reference alone and looks to the additional teachings of Liu, Coe, and Montgomery in formulating the obviousness rejection.

The Examiner finds that Liu teaches the administration of both claimed iron forms, however, only as individual components (*see* Final Act. 5–6; Ans. 6; FF6). Similarly, Montgomery teaches administration of an “iron-polysaccharide complex and uses it alternately with a ferric compound, to treat iron deficiency; both increase hemoglobin and red cell volume” (Ans. 6; FF7). The Examiner relies on the *Kerkhoven* rationale for providing the motivation “to combine the two components into a single composition for the same purpose of treating iron deficiency anemia,

providing a combination iron source, rendering the combination *prima facie* obvious, in addition to the specific teaching of Hermelin for the combination of two different iron sources.” (Ans. 7; *see* Final Act. 9–10, emphasis omitted).

Appellants contend (A) that the art does not recognize, teach, or suggest “the different mechanisms by which ferrous fumarate and PIC are absorbed” (Reply Br. 3); (B) that there is no direction in “Hermelin on which of the many iron complexes should be selected and combined with ferrous fumarate or any other iron salts” (App. Br. 17); (C) that “Hermelin specifically teaches that various iron-providing materials disclosed in the document are not equivalent” (Reply Br. 10–11); (D) that there is “no motivation to pick and choose” PIC and ferrous fumarate from the extensive lists in Hermelin (Reply Br. 10); and (E) that “Liu fails to provide any suggestion or motivation to combine ferrous and ferric iron sources in a single dose form” (App. Br. 18).

(A) Appellants contend that the art does not recognize the different absorption mechanisms (*see* Reply Br. 3). We do not find this argument persuasive as the claims are silent with respect to requiring different routes of absorption. It is well established that limitations not appearing in the claims cannot be relied upon for patentability. *In re Self*, 671 F.2d 1344, 1348 (CCPA 1982).

(B) Appellants contend that Hermelin does not provide guidance for picking the claimed iron components (*see* App. Br. 17). “[N]either the particular motivation nor the avowed purpose of the patentee controls [A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining

the elements in the manner claimed.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418, 419-420 (2007). Hermelin teaches formulations containing two different iron components (FF2 & FF5). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including non-preferred embodiments. *See Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) (The disclosure in the prior art of “a multitude of effective combinations does not render any particular formulation less obvious. This is especially true because the claimed composition is used for the identical purpose taught by the prior art”).

The Examiner reasons that Hermelin’s exemplified formulations direct one of ordinary skill in the art to using ferrous fumarate as one of the iron-containing sources, leaving only the second iron-component open for selection from various lists. Hermelin explicitly names PIC as one of the suitable iron complexes contemplated in the formulation (*see* Ans. 4). In addition, Hermelin teaches that PIC can be used either in a modified or non-modified form in the formulation (compare Hermelin claims 11 and 12). The Examiner however, does not rely on Hermelin alone in making the rejection (*see* Ans. 11–12), but combines Hermelin with the teachings of Liu, Coe, and Montgomery. Liu specifically teaches the use of ferrous fumarate and a polysaccharide-iron complex for treating anemia in patients (FF6). Thus, Hermelin in combination with Liu directs the ordinary artisan to select these two iron containing components for treating anemia. Accordingly, the combination of references provides guidance for picking the individual components.

(C) Appellants contend “that various iron-providing materials” are not equivalent (*see* Reply Br. 10–11). We are not persuaded that having different mechanisms of absorption disqualifies these compositions as art recognized equivalents as iron supplements (*see* Reply Br. 10–11). Even if Hermelin recognizes that different iron sources have different properties — each of the iron sources is considered an equivalent because each supplies iron for the purpose of treating anemia (FF1–FF5; *see also* Ans. 12 (“both ferrous fumarate and PIC are taught as suitable iron forms by Hermelin. . . . The teachings of Liu and Montgomery establish both iron forms are used to supply iron in therapy of iron deficiency anemia”).

(D) We are also not persuaded by Appellants’ arguments that there is no motivation to pick and choose ferrous fumarate and PIC, especially since each must be selected from a list disclosed in Hermelin (*see* Reply Br. 10; App. Br. 17)). Here, the Examiner finds that Hermelin exemplifies two ferrous fumarate compositions, thereby directing the ordinary artisan to choose this water soluble salt as one of the iron-providing materials leaving only the selection of the second iron-providing material open to be chosen from a list. Just because one has to select the second iron-providing component from a list, even if from an extensive list, does not make any one combination contemplated in Hermelin less obvious. *See Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807. Because each of the iron-providing materials in Hermelin is used for the same purpose, i.e., supplying iron to a patient, the selection of any of them in combination with ferrous fumarate would be obvious (FF1–FF5).

(E) We are also not persuaded by Appellants contention that Liu fails to combine ferrous and PIC in a single dose form (*see* App. Br. 18).

The test for obviousness is what the combined teachings of the references as a whole would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Thus, Appellants' focus on a single reference when the rejection is based on a combination is not persuasive. Additionally, combining two composition when each is taught in the art to be useful for the same purpose is obvious based on the rationale provided in *Kerkhoven*. Here, Liu discloses that ferrous fumarate and PIC individually are useful for increasing hemoglobin levels in an anemic patient population (FF6). We find no error with the Examiner's rationale that combining ferrous fumarate and PIC in a single formulation is obvious based on the combined teachings of Hermelin, Liu, Coe, and Montgomery.

After considering the evidence and the arguments, we conclude the weight of the evidence favors the Examiner's conclusion of obviousness. In addition to the arguments addressed above, we adopt the Examiner's reasoning (*see* Final Act. 3–11), and agree that the Examiner properly found Appellants' arguments unpersuasive (*see* Ans. 3–23; Final Act. 11–23). Because the Examiner presents a *prima facie* case of obviousness, we consider whether Appellants submit sufficient evidence or argument in rebuttal. “After a *prima facie* case of obviousness has been made and rebuttal evidence submitted, all the evidence must be considered anew.” *In re Eli Lilly & Co.*, 902 F.2d 943, 945 (Fed. Cir. 1990) (citing *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984)).

In an effort to rebut the Examiner's conclusion of obviousness Appellants provide declaration evidence to address the following: (1) that “physicians clearly prefer USPC's dual iron products over previously available products” (Reply Br. 12); (2) that “the two iron materials identified

and claimed by Appellant satisfied a long felt need” (Reply Br. 11; App. Br. 29–30); (3) that “showing superior effect on iron blood parameters in comparison with both the single-source compositions containing ferrous fumarate or PIC” (App. Br. 34); and (4) commercial success based on “the sales data presented demonstrate an increase in the relative number of dual iron products sold, compared to single iron products” (Reply Br. 16; App. Br. 31–33).

(1) Appellants present four declarations, the Bensch⁹, Rao¹⁰, Kopp¹¹, and Cortese¹² Declarations in an effort to establish nonobviousness based on secondary considerations. “The Examiner does not dispute that 95 pages of physicians’ letters have been provided as part of a declaration, and the physicians clearly prefer one or more of the dual iron products from USPC” (Ans. 13; *see* Bensch Decl., exhibits). The dispute lies with the conclusions that should be drawn from these letters. The Examiner notes that many of the letters presented do not state which USPC products are compared, thus, it is not possible to establish that the only difference between the single iron and dual iron product is the actual iron component (Ans. 13–14). The Examiner also points out that, because additional excipients are found in the various USPC formulations and any of these excipients could contribute to providing improved tolerability, it is essential

⁹ Declaration under 37 C.F.R. § 1.132 by Allison Krebs Bensch signed Oct. 9, 2012 (“Bensch Decl.”).

¹⁰ Declaration under 37 C.F.R. § 1.132 by Dr. Arun R. Rao signed Oct. 19, 2012 (“Rao Decl.”).

¹¹ Declaration under 37 C.F.R. § 1.132 by Dr. James Henry Kopp signed Oct. 3, 2012 (“Kopp Decl.”).

¹² Declaration under 37 C.F.R. § 1.132 by Dr. Jack L. Cortese signed Oct. 3, 2012 (“Cortese Decl.”).

that the only differences between formulation is the iron component (Ans. 13–14; *see also* Ans. 15 (“the skilled artisan would not be able to establish from comparative testimonials that the excipients do not affect iron uptake or tolerability, and thus contribute to the physicians’ preferences”)). The Examiner explains that components such as gelatin can “sooth[] the stomach/intestines in these formulations, reducing GI side effects further, or promoting better absorption” (Ans. 16). We agree with the Examiner’s finding that, although an impressive number of physicians now recommend or prescribe the dual iron containing supplements to their patients, the evidence is not sufficient to establish that the recommendation is because of the claimed iron component. In order to establish non-obviousness there has to be a nexuses between claimed iron formulation, and the reason for prescribing the product that cannot be influenced by other factors, such advertising or promotional incentives. Accordingly, we agree with the Examiner that that the presentation of physicians letters and declarations in the Bensch Decl. stating preferences for the dual iron formulations is not sufficient to establish non-obviousness when weighed against the totality of the prior art evidence.

(2) Appellants contend that the declarations establish long-felt need (Reply Br. 11; App. Br. 29–30). We are not persuaded. As explained by the Examiner (Ans. 16–17), to establish a long-felt need, three elements must be proven: First, the need must have been a persistent one that was recognized by ordinarily skilled artisans. *In re Gershon*, 372 F.2d 535, 538 (CCPA 1967). Second, the long-felt need must not have been satisfied by another before Appellants' invention. *See Newell Companies, Inc. v. Kenney Mfg. Co.*, 864 F.2d 757, 768 (Fed. Cir. 1988) (“[o]nce another supplied the key

element, there was no long-felt need or, indeed, a problem to be solved”). Third, the invention must, in fact, satisfy the long-felt need. *In re Cavanagh*, 436 F.2d 491, 496 (CCPA 1971).

As explained above (*I*), the physicians letters and the declarations are not sufficient to establish the first element of the long-felt need analysis because iron supplements that increase blood iron levels were known and available, even if the claimed formulations provide reduced side effects. Additionally, the Kopp. Decl. implies that not every patient suffers from side effects and for that patient population the single iron formulations are suitable iron sources (*see* Kopp. Decl. ¶ 10 (“In some cases where a patient taking a single source iron produce has had problems, I prescribe dual iron”).)

The Examiner explains that Appellants are also not able to meet the second element of the long-felt need analysis. Although Hermelin does not exemplify an iron composition containing ferrous fumarate and PIC, “Hermelin clearly teaches two-iron component compositions that improve iron absorption, and reduce the GI side effects of single iron therapies” (Ans. 17; FF1–FF5). We agree with the Examiner’s rational as set out in the Answer, and agree that the evidence does not support a finding of long-felt need.

(3) We are also not persuaded by Appellants contention that there is an unexpected effect based on the dual iron composition, containing ferrous fumarate or PIC (*see* App. Br. 34). There has to be a nexus between the unexpected property and the claimed invention. *See In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011) (“Where the offered secondary consideration actually results from something other than what is both claimed and *novel* in

the claim, there is no nexus to the merits of the claimed invention.”). The Examiner raises three points with regard to the unexpected property argument.

First, the Examiner explains that all the commercial compositions described in the Bensch Declaration contain additional excipients in addition to the dual iron sources. The Examiner notes that many of the tested dual iron products contain gelatin and questions “whether gelatin as a component soothes the stomach/intestines in these formulations, reducing GI side effects further, or promoting better absorption” and resulting in less side effects (Ans. 18).

Second, the Examiner explains that the reduced side effects using a dual iron containing components can indeed be expected. “[T]he teachings of record, especially the teachings of Hermelin, lead to the expectation of reduction in side effects, and increase in iron absorption levels with dual iron products” (Ans. 22).

Hermelin makes clear that the combination of two iron substances enhancing the rate and extent of absorption of iron (paragraph 0009); i.e., replenishing iron stores would be the result of enhanced rate and extent of absorption; And the side effects of single iron products, resulting from high dosing of poorly absorbed iron discussed at paragraph 0008 would have been minimized.

(Ans. 19). In other words, using two iron-containing components allows for the reduction of each individual component in order to achieve the same iron dosing. Thus, by simply cutting in half the component known to cause side effects, the ordinary artisan would expect a reduction in the side effects.

Finally, the Examiner also points out that any of the comparisons

made in the declarations do not compare the claimed product to the closest prior art product of Hermelin (Ans. 22).

(4) We are also not persuaded by Appellants contention that they have shown commercial success (Reply Br. 16; App. Br. 31–33). We agree with the Examiner “that sales data presented demonstrate an increase in the relative number of dual iron products sold, compared to single iron products. But the evidence . . . does not include a market share, compared to any competitor products” (Ans. 17). The results in the change in sales between the two products marketed by the same company can be for other reasons such as increased marketing efforts of one product over the other, the use incentives and other promotional or marketing efforts can drive the sales of one product versus the other (*see* Ans. 17–18). Commercial success “is relevant in the obviousness context only if there is proof that the sales were a direct result of the unique characteristics of the claimed invention – as opposed to other economic and commercial factors unrelated to the quality of the patented subject matter.” *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996). “In other words, a nexus is required between the sales and the merits of the claimed invention.” *Id.* Without knowing the market share of the product over time it cannot be evaluated with respect to the competitors’ products and it cannot be evaluated whether the sales of the dual iron product are due to the claimed compositional components by taking over the competitors market share.

Accordingly, we agree with the Examiner that Appellants’ presentation of the four declarations and the physicians letters stating preferences for the dual iron formulations are not sufficient to establish non-

Appeal 2014-000048
Application 12/941,571

obviousness when weighed against the totality of the prior art evidence. The preponderance of the evidence weighs against Appellants.

SUMMARY

We affirm the rejection of claims 1 and 4 under 35 U.S.C. § 103(a) over Hermelin, Liu, Coe, and Montgomery.

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).

AFFIRMED