United States Court of Appeals for the Federal Circuit

01-1445
(Serial no. 08/419,229)

IN RE PHILIP R. THRIFT and CHARLES T. HEMPHILL

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Appealed from: United States Patent and Trademark Office
                Board of Patent Appeals and Interferences

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DECIDED: August 9, 2002

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Before BRYSON, GAJARSA, and DYK, <u>Circuit Judges</u>.

DYK, <u>Circuit Judge</u>.

Philip R. Thrift and Charles T. Hemphill appeal from the decision of the Board of Patent Appeals and Interferences ("Board") affirming the examiner's rejection of claims 1-19 for obviousness under 35 U.S.C. § 103. <u>Ex parte Thrift</u>, No. 1998-1109 (Bd. Pat. App. & Int. Feb. 28, 2001) ("<u>Decision on Appeal</u>"); <u>Ex parte Thrift</u>, No. 1998-1109 (Bd. Pat. App. & Int. Apr. 24, 2001) ("<u>Decision on Request for Rehearing</u>"). We affirm the Board's decision with respect to claims 1-10, but vacate the Board's decision with respect to claims 11-19, and remand for further proceedings with respect to these claims.

BACKGROUND

On April 10, 1995, Thrift and Hemphill filed U.S. Patent Application No. 08/419,229 (the "'229 application") entitled "Voice Activated HyperMedia Systems Using Grammatical Metadata." On June 6, 1995, Thrift and Hemphill assigned their entire

rights in the invention described in the '229 application to Texas Instruments, Inc. ("TI"), making TI the real party in interest in this proceeding.

The parties focus on the three independent claims as amended: claims 1, 11, and 14. Appellants conceded before the Board that dependent claims 2-4 stand or fall with claim 1. Appellants' Br. to Board at 3. Moreover, claims 5-10 are ultimately dependent on claim 1; claims 12 and 13 are dependent on claim 11; and claims 15-19 are ultimately dependent on claim 14. Although appellants urge that the examiner rejected claims 5-10, 12, 13, and 15-19 without providing any evidence of the additional features of these claims, appellants fail to identify the specific errors in the Board's decision or even the features of these claims that would allow them to overcome an obviousness rejection. Such a conclusory argument by appellants is not sufficient to raise separate issues on appeal with respect to the dependent claims. Thus, all of the dependent claims must stand or fall with their respective independent claims 1, 11, and 14.

The independent claims provide as follows:

1. A voice activated Hypermedia system using grammatical metadata, said system comprising:
    a. a speech user agent;
    b. a network browsing module; and
    c. an information resource located on a computer network wherein said speech user agent facilitates voice activation of said network browsing module to access said information resource.

11. A voice activated Hypermedia system using grammatical metadata, said system comprising:
    a. a speech user agent;
    b. a network browsing module;
    c. an information resource located on a computer network wherein said speech user agent facilitates voice activation of said network browsing module to access said information resource;
    d. a means for extracting a grammar from a hypermedia source on said information resource for future reference to said source;
    e. a means for modifying said grammar;
    f. a means for automatically producing an intelligent grammar from said information resource; and

g. a means for processing said grammar to produce a reference to said hypermedia source.

14. A voice activated Hypermedia system using grammatical metadata, said system comprising:
   a. a speech user agent;
   b. a browsing module;
   c. an information resource; and
   d. a means for producing a grammar from textual representation of links to said information resource.

'229 application at 13-14; Jan. 14, 1997 Amendment at 1-3.

The invention recited in claim 1 comprises a speech interface (<u>i.e.</u>, the speech user agent) that allows users to access information located on a computer network using a network browsing module, a software tool used to locate database sites on a network. Using the speech interface, an individual can use voice commands to activate the browser and access information located on the computer network, such as a desired Hypertext Markup Language ("HTML") page. The user can access various links on a given HTML page by speaking aloud the link names.

Claims 11 and 14 add the ability to create a "grammar." A grammar is an established set of standard query words. '229 application at 11. According to the '229 application, each user can construct a grammar and associate it with a Uniform Resource Location ("URL"), creating a "Speakable Hotlist." <u>Id.</u> at 4. A "Speakable Hotlist" allows the user to access a number of different URLs by just saying a phrase. For example, saying the phrase "how does the weather look today" could immediately link the user to the URL <http://www.washingtonpost.com/weather>. <u>Id.</u> at 5.

Claim 11 differs from claim 1 by adding a number of means limitations providing the functions of extracting, modifying, dynamically producing, and processing the grammar. Claim 14 differs from claim 1 by reciting "a means for producing a grammar from textual representation of links to [the] information resource." '229 application at 14.

On August 7, 1996, the examiner issued a first Office Action, which rejected claims 1-19 under "35 U.S.C. § 103 as being unpatentable over Stefanopoulos et al. [U.S. Patent No. 5,333,237] and in view of Schmandt [Chris Schmandt et al., Augmenting a Window System with Speech Input, Computer Magazine, Aug. 1990, at 50 ("Schmandt")] . . . ." Aug. 7, 1996 Office Action at 3.

These prior art references relate most directly to claim 1. U.S. Patent No. 5,333,237 (the "'237 patent") issued to Stefanopoulos, et al. ("Stefanopoulos") is entitled "Hypermedia Structured Knowledge Base System." Stefanopoulos is directed to a hypermedia-structured expert system (i.e., a browser software system) that searches and accesses archived electronic documents. '237 patent, col. 1, ll. 11-15. The disclosed invention "incorporates the ability to have both an electronic-based document and an expert system [i.e., a browser software system] coexist within a single computer program." Id. at col. 2, ll. 52-54. The browser software system and the electronic documents are interlinked so that the user can move easily between them. Id. at col. 2, ll. 55-57. Stefanopoulos discloses the processing of user action based on embedded intelligence and returning results to the user. Id. at col. 6, ll. 52-54. Stefanopoulos also discloses an advice (or help) scheme that provides troubleshooting advice to the user, id. at col. 6, ll. 55-68, in addition to disclosing the textual representation of hypertext links. Id. at col. 6, ll. 32-42, col. 7, ll. 18-38.

Another pertinent prior art reference is an article entitled "Augmenting a Window System with Speech Input," authored by Chris Schmandt, Mark S. Ackerman, and Debby Hindus. The Schmandt reference is directed to controlling a windows system by speech input. Schmandt at 50. Speaking a window's name will move the window to the front of the screen and move the cursor into that window. Id. Schmandt describes how speech can be used to navigate in a windows system so that speech actually

"assume[s] some of the functions currently assigned to the mouse." Id. Schmandt describes two speech interfaces: "Xspeak" and "Xspeak II." Id. at 52, 54. Xspeak rearranges windows by "associat[ing] windows with voice templates, [i.e.,] words trained and stored in the recognizer and constituting its vocabulary." Id. at 52. Xspeak II improves on the speech interface of the original Xspeak system by making two changes: (1) "improv[ing] recognition rates . . . [by] add[ing] the ability to create subtemplates;" and (2) "includ[ing] a specialized language, G-XL, to facilitate general-purpose handling of the window[s] system." Id. at 54. In other words, "Xspeak II allows greater flexibility in the speech interface." Id.

On August 7, 1996, the examiner concluded that claim 1 was obvious because Stefanopoulos taught a "hypermedia structured knowledge base system" comprising a browsing module and an information resource, and Schmandt taught a speech interface that served as a navigational tool. Aug. 7, 1996 Office Action at 3. The examiner's motivation to combine the two references was that the speech interface to the Web "allows easy access to information on the Web by reducing manual intervention [i.e., the use of keyboard], and . . . is user friendly." Id.

Although the examiner did not find that Stefanopoulos and Schmandt disclosed the grammar-creation capability added in claims 11 and 14, the examiner also rejected both of these claims, noting that "[t]he use of grammar is old and well known in the art of speech recognition as a means of optimization which is highly desirable." Id. at 5. The examiner concluded that the additional features specified in the dependent claims were also unpatentable over the cited references, and ultimately rejected claims 1-19 under 35 U.S.C. § 103.

On January 14, 1997, appellants amended claims 1-5, 7-9, and 11 to attempt to overcome the obviousness rejections. Most pertinently, the "information resource" of

claim 1 was further defined as "located on a computer network wherein said speech user agent facilitates voice activation of said network browsing module to access said information resource." Jan. 14, 1997 Amendment at 2. This limitation was also added to claim 11 in addition to amending element (d) of claim 11 to recite "a means for extracting a grammar from a hypermedia source on said information resource for future reference to said source." Id. at 3 (emphasis indicating added language).

On March 27, 1997, in response to the amendment, the examiner issued a final Office Action, maintaining the rejection of claims 1-19 of the '229 application. Mar. 27, 1997 Final Office Action at 2. The examiner found the claims obvious, even in light of the "newly added limitation of '. . . an information resource located on a computer network . . .,'" because Schmandt "teach[es] a window[s] system that links together workstations," and "[i]t would have been obvious to one with ordinary skill in the art at the time of invention that workstations linked together form a network and are served by an information resource, because an artisan would recognize that this is an efficient usage of space available." Id. at 2-3.

The Board affirmed the examiner's rejection of all 19 claims. Decision on Appeal at 10. The Board concluded with respect to independent claim 1, "the skilled artisan would have been motivated and found it obvious to incorporate the speech input and speech recognition techniques taught by Schmandt into the expert system of Stefanopoulos in order to reduce the need for less user friendly manual keyboard and mouse click inputs." Id. at 5. The Board sustained the examiner's rejection of dependent claims 2-4 as falling with claim 1. Id. at 8. The Board further noted that "independent claims 11 and 14 are similar to independent claim 1 . . . but add limitations directed to the construction and extraction of grammar related features as part of the speech user agent." Id. at 9. The Board concluded with respect to claims 5-19, "the

Examiner's reasoning is sufficient to shift the burden to Appellants to come forward with evidence and/or arguments to rebut the Examiner's position." Id. Although the Board acknowledged that "the applied references do not explicitly disclose several of the various features of claims 5-19," it sustained the rejection of these claims because "Appellants' minimal arguments do not address the Examiner's position of obviousness or inherency with respect to the features recited in these claims." Id. at 10.

On rehearing, the Board denied appellants' request to reconsider its previous decision rejecting claims 1-19. Decision on Request for Rehearing at 7. The Board once again noted the sufficiency of the examiner's reasoning in proving a prima facie case of obviousness and the lack of evidence to rebut the examiner's position. Id. at 6-7.

We have jurisdiction over this appeal pursuant to 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

I

"The ultimate determination of whether an invention would have been obvious under 35 U.S.C. § 103(a) is a legal conclusion based on underlying findings of fact." In re Kotzab, 217 F.3d 1365, 1369, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000). The Board's ultimate determination of obviousness is reviewed without deference; the Board's underlying factual findings are reviewed for substantial evidence. Id.

II

Appellants urge that their invention described in the '229 application was not obvious under 35 U.S.C. § 103 over Stefanopoulos in view of Schmandt because (1) the record does not support the Board's determination that the examiner made a prima facie case of obviousness of claim 1; and (2) the Board failed to provide evidence

of the presence of key limitations of claims 11 and 14 in the prior art. We address each argument in turn.

A. Prima Facie Case of Obviousness and Claim 1

To establish a prima facie case of obviousness, the Board must, inter alia, show "some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). "The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved." Kotzab, 217 F.3d at 1370, 55 USPQ2d at 1317.

The Board agreed that the examiner had satisfied his burden of presenting a prima facie case of obviousness with respect to claim 1. Decision on Appeal at 5. The Board explained:

> With respect to independent claim 1, the Examiner, as the basis for the obviousness rejection, proposes to modify the disclosed Hypermedia structured expert system of Stefanopoulos which, in the Examiner's view, discloses the claimed invention except for the speech user agent. To address this deficiency, the Examiner turns to Schmandt which discloses the use of speech input to navigate through a multiple window based computer system display. In the Examiner's analysis . . . the skilled artisan would have been motivated and found it obvious to incorporate the speech input and speech recognition techniques taught by Schmandt into the expert system [i.e., here the browser software system] of Stefanopoulos in order to reduce the need for less user friendly manual keyboard and mouse click inputs.
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> . . . In our view the Examiner's analysis is sufficiently reasonable that we find that the Examiner has at least satisfied the burden of presenting a prima facie case of obviousness.

Decision on Appeal at 4-5 (emphasis added).

Appellants appear to concede that Stefanopoulos discloses all of the limitations of the claimed invention except the "speech user agent." However, appellants urge that Schmandt does not disclose a "speech user agent." Appellants define a "speech user

agent" as an agent that "dynamically creates the vocabulary, grammar and actions that are possible for the user to use in a given situation." Appellants' Br. at 35 (emphasis added).

When examining claims for patentability, claims are interpreted as broadly as is reasonable and consistent with the specification. See, e.g., In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Because claim 1 uses the general term "speech user agent" without any modifiers, appellants' limiting interpretation of this phrase is inappropriate, particularly in light of the grammar-creation capability separately recited in claims 11 and 14. Instead, we interpret the phrase "speech user agent" consistent with its plain meaning: an interface that allows the user to interact with the system by speaking. See IBM Dictionary of Computing 638 (10th ed. 1994) (defining "speech recognition" as "[t]he recognition of voice communication as a series of words or sentences"); Van Nostrand Reinhold Dictionary of Information Technology 473 (3d ed. 1989) (defining "speech recognizer" as "[i]n man-machine interfaces, a system that receives spoken word inputs and identifies the message. The system output can then be used to initiate appropriate actions or responses."); Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989, 50 USPQ2d 1607, 1610 (Fed. Cir. 1999) ("The general rule is, of course, that terms in the claim are to be given their ordinary and accustomed meaning."). Although an applicant may be his own lexicographer, Markman v. Westview Instruments, Inc., 52 F.3d 967, 980, 34 USPQ2d 1321, 1330 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996), nothing in the specification defines the phrase "speech user agent" differently from its ordinary meaning. Applying the above definition, Schmandt clearly discloses a "speech user agent" because the reference specifically describes "Xspeak," a speech interface with the windows environment.

Appellants also argue that even if Schmandt discloses a "speech user agent," there is no suggestion or motivation to combine Schmandt and Stefanopoulos. Recently, in In re Lee, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002), we held that the Board's reliance on "common knowledge and common sense" did not fulfill the agency's obligation to cite references to support its conclusions. Id. at 1344, 61 USPQ2d at 1434. Instead, the Board must document its reasoning on the record to allow accountability. Id. at 1345, 61 USPQ2d at 1435. This documentation also allows effective judicial review. Id.

In the present case, the reasoning articulated by the Board is exactly the type of reasoning required by In re Lee. Both the examiner and the Board clearly identified a motivation to combine the references, stating that the skilled artisan would have "found it obvious to incorporate the speech input and speech recognition techniques taught by Schmandt into the expert system of Stefanopoulos in order to reduce the need for less user friendly manual keyboard and mouse click inputs." Decision on Appeal at 5; accord Aug. 7, 1996 Office Action at 3. The motivation to combine the references is present in the text of each reference. The Schmandt reference itself verifies this motivation, stating that "allowing users to remain focused on the screen and keyboard, instead of fumbling for the mouse, would be beneficial in a workstation environment." Schmandt at 51. Stefanopoulos itself, while not expressly disclosing the use of speech recognition, sets forth the motivation to combine the references, stating that "there are alternative means to select the buttons, including . . . voice-activated transfer means, which may be readily adapted for use with the present invention by those skilled in the art." '237 patent, col. 4, ll. 34-38.

Appellants also argue that Schmandt discloses only a pre-programmed grammar. Because the construction of "speech user agent" does not require an agent that

dynamically changes grammar and vocabulary, but only an agent that allows the user to interact with the system by speaking, we conclude that Schmandt adequately discloses a speech user agent as required by claim 1 of the '229 application. Appellants further urge that Schmandt's invention is directed to navigation in a windows system, not the web-browsing environment of the present invention. However, the Board properly concluded that the present invention is not limited to a web-browsing environment, stating that "the language of the appealed claims reveals only a recitation of a 'computer network' with no recitation of any remote accessing of a database or any limitation as to database complexity or the internet." Decision on Appeal at 8. Appellants also argue that the prior art references revealed no reasonable expectation of success in carrying out the invention; however, the Board found that this issue had not been properly raised. Finally, we are not persuaded that Schmandt does not suggest the combination because it only refers to speech recognition as substituting for the mouse and not the keyboard. Accordingly, the Board's conclusion that the invention recited in claim 1 was obvious is well supported.

For these reasons, we affirm the Board's decision as to independent claim 1 and dependent claims 2-10.

B. Evidence of Key Limitations of Claims 11 and 14 in the Prior Art

1. Claim 11

As noted above, claim 11 differs from claim 1 in that claim 11 adds grammar-creation capability features including a means for extracting a grammar from a hypermedia source; a means for modifying the grammar; a means for dynamically producing the grammar; and a means for processing the grammar to produce a reference to a specific hypermedia source. In the August 1996 Office Action, the examiner summarily rejected claim 11's grammar-creation capability limitations, stating

that "[t]he use of grammar is old and well known in the art of speech recognition as a means of optimization which is highly desirable." Aug. 7, 1996 Office Action at 5. The examiner's final Office Action generally affirmed his initial conclusion as to obviousness, without specifically discussing the grammar features. Mar. 27, 1997 Final Office Action at 2. The Board subsequently affirmed the examiner's decision to reject claim 11, noting that the examiner set forth sufficient reasoning for asserting the obviousness or inherent nature of each of the claimed features, and therefore, "the Examiner's reasoning is sufficient to shift the burden to Appellants to come forward with evidence and/or arguments to rebut the Examiner's position." Decision on Appeal at 9; accord Decision on Request for Rehearing at 6.

Appellants urge that this rejection was improper because there is no evidence in the record to prove that the following limitations of claim 11 would be obvious:

> d. a means for extracting a grammar from a hypermedia source on said information resource for future reference to said source;
> e. a means for modifying said grammar;
>   . . . .
> g. a means for processing said grammar to produce a reference to said hypermedia source.

Even if all of the limitations of claim 11 were present in the prior art, appellants urge that there is no teaching or suggestion supporting the combination of these references.

We agree with appellants that the Board's ground of rejection is simply inadequate on its face. The Board sustained the examiner's very general and broad conclusion of obviousness based on his finding that "[t]he use of grammar is old and well known in the art of speech recognition as a means of optimization which is highly desirable." Aug. 7, 1996 Office Action at 5; accord Decision on Request for Rehearing at 6. Although this statement is likely true, it fails to address the grammar-creation capability limitations of claim 11. While the examiner's statement generally addresses the use of grammar, it does not discuss the unique limitations of extracting, modifying,

or processing the grammar to interact with hypermedia sources. The Board's decision is not supported by substantial evidence because the cited references do not support each limitation of claim 11. See In re Vaeck, 947 F.2d 488, 493, 20 USPQ2d 1438, 1443 (Fed. Cir. 1991).

The Patent Office ("PTO") on appeal does not even defend the Board's rejection of claim 11 on the merits. Rather, it urges that appellants did not properly raise the grounds for sustaining the patent before the Board. The PTO's argument seems weak at best because appellants' brief to the Board specifically discusses the alleged failure of the Schmandt and Stefanopoulos references to teach the claimed invention of claim 11. Despite language in the Board's reconsideration decision faulting appellants for failure to raise issues before the Board,[1] we do not read the Board's decisions on appeal or reconsideration as resting on this ground. Rather, the Board sustained the examiner's rejection on the merits.

> In SEC v. Chenery Corp., 332 U.S. 194, 196 (1947), the Supreme Court held that
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> > a reviewing court, in dealing with a determination or judgment which an administrative agency alone is authorized to make, must judge the propriety of such action solely by the grounds invoked by the agency. If those grounds are inadequate or improper, the court is powerless to affirm the administrative action by substituting what it considers to be a more adequate or proper basis.

Here the Chenery rule is implicated because the Board failed to provide an adequate ground for sustaining the rejection of claim 11 in either its decision on appeal or its decision on request for rehearing. See also SKF USA Inc. v. United States, 254 F.3d 1022, 1028 (Fed. Cir. 2001).

Therefore, because the Board did not hold that appellants' arguments were untimely and did reach the merits of claim 11 but failed to provide an adequate basis for

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[1] The Board noted that "neither of [Appellants' arguments regarding motivation were] made by Appellants in the Brief. An argument not timely made is an argument waived." Decision on Request for Rehearing at 4.

rejecting this claim, we vacate and remand for further proceedings before the Board as to independent claim 11 and dependent claims 12 and 13.

  2. Claim 14

Since the limitations of claims 11 and 14 are very similar, the examiner rejected claim 14 on the same grounds as he rejected claim 11. Appellants urge that there was also insufficient evidence in the record to support the examiner's and Board's conclusions regarding obviousness because the cited references do not support all of the limitations of claim 14. We agree that the Board's decision is not supported by substantial evidence. Again, in its brief to this court, the PTO attempts to sustain the actions of the Board on grounds not articulated in the Board's decision, relying on Schmandt to defend the rejection of claim 14. The PTO claims that Schmandt's Xspeak II system discloses the grammar limitation of claim 14: "a means for producing a grammar from textual representation of links to said information resource." The PTO further contends that Schmandt provides the motivation to combine a speech user agent such as Xspeak II with the information resource described in Stefanopoulos because Xspeak II provides the benefits of decreased manual input and improved recognition rates.

Whatever merit there is to the PTO's defense of the rejection of claim 14 raised in its brief submitted to this court, that ground does not appear in the Board's decision and may not be the basis for affirmance. See Chenery, 332 U.S. at 196; In re De Blauwe, 736 F.2d 699, 705 n.7, 222 USPQ 191, 196 n.7 (Fed. Cir. 1984) ("[T]he Solicitor cannot raise a new ground of rejection or apply a new rationale to support a rejection in appeals from decisions of the board."). We vacate and remand for further proceedings as to independent claims 14 and dependent claims 15-19.

CONCLUSION

For the foregoing reasons, we affirm the Board's decision as to claims 1-10, and we vacate and remand the Board's decision as to claims 11-19 for further proceedings consistent with this opinion.

COSTS

No costs.