Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHERYL K. NATHMAN and REED C. WHITTINGTON

Appeal No. 1997-1577
Application No. 07/941,466

ON BRIEF

Before BARRETT, FLEMING, and LEVY, Administrative Patent Judges.
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-16, which are all of the claims pending in this application.

BACKGROUND

The appellant's invention relates to a database correlatable chart generation method. An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced as follows:

1. A method of creating a hard copy database correlatable navigational chart from a non-real-world visual database stored as a computer file array which defines the terrain and cultural features of a simulated non-real-world environment, comprising the steps of:

reading said non-real-world visual database into a filtered data structure which includes coplanar polygonal areas, lineal routes, and point types to represent at least one block of terrain in said simulated non-real-world environment;

determining a number of contour intervals for said block of terrain in said simulated non-real-world environment;

testing said block of terrain for combinations of elevation levels to determine the need for and location of any contour lines;

determining shape coordinates for each of said point types;

converting planar locations of said coplanar polygonal areas, said contour lines, said lineal routes and said shape coordinates of said point types to a pre-selected scale; and

generating a hard copy of a navigational chart which is correlated to said non-real-world visual database by plotting each of said coplanar polygonal areas, said contour lines, said lineal routes, and said shape coordinates for each of said point types in accordance with said pre-selected scale.

The prior art references of record relied upon by the

examiner in rejecting the appealed claims are:

Rymer	3,801,720	Apr. 02, 1974
Thompson	4,823,287	Apr. 18, 1989
Dawson et al. (Dawson)	4,876,651	Oct. 24, 1989
Seki et al. (Seki)	5,444,618	Aug. 22, 1995

(Filed: Jul. 24, 1992)

Claims 1-16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Dawson in view of Seki, Thompson, and Rymer.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 19, mailed December 3, 1996) for the examiner's complete reasoning in support of the rejections, and to the appellants' brief (Paper No. 18, filed October 8, 1996) for the appellants' arguments thereagainst. Only those arguments actually made by the appellants have been considered in this decision. Arguments which the appellants could have made but chose not to make in the briefs have not been considered. See 37 CFR 1.192(a).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the

rejections advanced by the examiner, and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the brief along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the invention as set forth in claims 1-16. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determin-ations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art

references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.,

776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole. See id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785,

788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

The appellants state (brief, page 1) that "[c]laims 1-16 are grouped together." The appellants present the same arguments with respect to independent claims 1 and 6. We therefore select claim 1 as representative of the group.

Two issues are presented (brief, page 4) before us on appeal. The first issue is whether the combination of Dawson, Thompson, Seki, and Rymer establish a prima facie case of obviousness under 35 U.S.C. § 103, and particularly whether the prior art teaches "generating a hard copy of a navigational chart which is correlated to said non-real-world visual database . . . ." The second issue is whether, assuming that the prior art establishes a prima facie case of obviousness, the Declaration evidence of long-felt need in the art is sufficient to overcome the prima facie case.

The appellants state (brief, page 5) that claims 1 and 6 include the steps of "reading said non-real-world visual database into a filtered data structure" and "generating a

hard copy of a navigational chart which is correlated to said non-real-world visual database." The appellants assert (answer, page 6) that "the Examiner is improperly using hindsight to lead him to the conclusion that it would have been obvious to create a hard copy navigational chart for the real world Digital Map System of Dawson . . . ." The appellants further assert (brief, page 7) that "each of the prior art references fail to teach or suggest reading a non-real-world visual database into a filtered data structure."

With regard to the appellants' first point, the examiner takes the position (answer, pages 4 and 5) that Dawson discloses "the steps of reading a visual database into a filtered data structure," and that "Dawson et al. does not explicitly disclose that a data structure is created, however, this is known in the art as taught by Seki et al." The examiner takes the position (answer, page 9) that "the distinction between real-world data and non-real-world data is not a patentable distinction" because "data representing a world (whether real or non-real) is an abstraction . . . representing an environment."

With regard to the appellants' second point, the examiner further states (answer, page 5) that "Dawson et al. does not explicitly disclose that a hardcopy is produced."

Dawson teaches (col. 1, lines 16-29) that in the prior art, paper maps were provided to pilots to provide topographical features of the terrain, but that it was a burden for a pilot to try to calibrate the aircraft's position from a paper map on a pilot's knee. Digital map systems were created to generate a map similar to the format of a paper map. The display automatically calibrated the aircrafts position, and showed terrain elevation, as well as cultural and linear features such as roads, railroads, and rivers. Dawson's invention (id. at lines 54-68) was to provide improved virtual memory storage and access which permits overlaying contour lines and for decluttering by selecting or deselecting individual features from the map for display. The data required to build the display is extracted from a preprocessed database.

We find that the deselecting of data from the map for display on a screen creates a filtering of the data. In addition, by deselecting individual features of the map for

display, we find that a non-real-world database is created as the visual display no longer represents the real-world map data. Thus, the prior art teaches that one can display real-world and non-real-world features on a display. Moreover, we find that Dawson discloses (col. 5, lines 24-26) that "[o]ther features such as roads, railroads, and rivers may be embedded in the terrain data structure" (underlining added). While we find that Seki also teaches the use of a data structure (Figure 4a) in a topographical processing system, we find this to be cumulative of the terrain data structure of Dawson. In addition, we find that Rymer teaches (col. 1, lines 3-10) simulating a coastline in a "navigational training system" which is a non-real-world display. We find Rymer's teaching to also be cumulative of the teaching of Dawson. From these teachings, we find that the prior art teaches reading said non-real-world visual database into a filtered data structure, but not as part of a method of creating a hard copy database correlatable navigational chart. We agree with the examiner (answer, pages 4 and 5) that Dawson (col. 9, lines 16-20) and Thompson (col. 5, lines 4-67, and Figure 3) teach determining a number of contour intervals for a block of terrain, and

testing the block of terrain for combinations of elevation levels to determine the need for and location of any contour lines. We find that Dawson additionally discloses (col. 1, lines 68 - col. 2, line 2; col. 5, lines 2 and 3) that the real-time moving display of the map is displayed on a cathode ray tube or similar display. Dawson is silent as to printing a hard copy of the visual database.

The difference then between the claim and the prior art is the generation of a hard copy of the navigational chart which is correlated to the non-real-world visual database.

As acknowledged by the examiner (answer, page 5) Dawson does not explicitly disclose generating a hard copy of the navigational chart. We find that the prior art references relied upon by the examiner fail to teach or suggest generation of a hard copy of a navigational chart correlated to the visual database. In the opinion of the examiner (answer, pages 5 and 6)

> it would have been obvious to one of ordinary skill in the art at the time the invention was made to include this feature because Dawson et al. disclose at column 1, lines 24-25 that the generated map is similar to paper maps and printing the generated map would allow for use of the map in planes not equipped with a display or as a reference for flight planning

> where a computer system is not always available.

The examiner further opines (answer, page 8) that

> the generation of hardcopies of computer generated images is well known in the art and it would have been obvious to one of ordinary skill in the art to include this feature to be used in the same manner as hardcopies have been used in the prior art for training or planning purposes.

The appellants assert (brief, page 6) that "each of the cited references fail to teach or suggest creating a navigational chart for a simulated non-real-world environment." The appellants argue (brief, page 6) that the digital mapping display system of Dawson displays information from existing paper maps, and that there is no need to create a hard copy navigational chart from the stored database, since the corresponding real world navigational charts already exist. The appellants rely upon the Declarations of J. Cary Quinn and Joseph A. Petrazio. Both Declarations acknowledge (Background, page 2) that non-real-world simulation features are added to the visual database. The Declaration of J. Cary Quinn states[1] (page 2) that for about fifteen (15) years

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[1] A similar statement is made by Declarant Joseph A. Petrazio for a period spanning six (6) years.

flight and mission training was performed either without navigational charts, or with real world charts which were used even though the database corresponding to the real-world environment had been modified for customized flight training scenarios. In the opinion of Declarant J. Cary Quinn, negative training resulted from using navigational charts which did not correspond with the simulated non-real-world environment. The Declaration of J. Cary Quinn additionally states[2] (page 4) that

> I wish to stress the point that, in the highly competitive industry, for a period of about fifteen (15) years although the need was evident, the industry failed to develop a process for producing hard copy database correlatable navigational charts from a non-real-world visual database as claimed.

The question in our mind, after reading the Declarations is: why couldn't one of ordinary skill in the art have generated a hard copy of a navigational chart correlated to the non-real-world visual database? We have reviewed the Declarations and find no answer to this question.

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[2] A similar statement is made by Declarant Joseph A. Petrazio for a period spanning six (6) years.

There is no statement that those skilled in the art tried to print out a hard copy of the navigational database and were unable to. Thus, there is no evidence of long-felt need and failure of others.

We have no evidence that those skilled in the art tried to print out a navigational chart from the visual database and were unable to do so. On the other hand, we have no factual evidence in the record of generating a hard copy of a navigational chart correlated to the visual database in the prior art.

Looking to the procedural burdens placed upon the examiner, as stated by the court in In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993), "[i]n rejecting claims under 35 U.S.C. Section 103, the examiner bears the initial burden of presenting a prima facie case of obviousness." The asserted problem in the prior art that was solved by the appellants' invention was to generate a hard copy of the navigational chart which is correlated to the non-real-world visual database, so that the pilot would have a navigational chart that was consistent with the display. The examiner merely asserts that (answer, page 8) generation of

hard copies of computer generated images was well known. However, notwithstanding the fact that printing out a hard copy of a database was per se well known, none of the reference relied upon by the examiner teach or suggest generating a hard copy of the navigational chart which is correlated to the non-real-world visual database. Nor is there persuasive evidence advanced by the examiner to support the obviousness of modifying the combined teachings of Dawson considered with Thompson, Seki, and Rymer to create the claimed method of generating a hard copy of a navigational chart correlated to the non-real-world visual database. The claimed method steps require more than the per se printing of a hard copy of a database. More than mere assertions are required by the examiner when the difference is argued to be the appellants' invention.

We therefore find that the examiner has not met the initial burden of establishing a prima facie case of obviousness of the claimed invention. Accordingly, the rejection of claim 1 is reversed. As claim 6, the other independent claim, contains identical language, the rejection of claim 6 under 35 U.S.C.

§ 103 is likewise reversed. As claims 2-5 and 7-16 depend from claims 1 and 6, the rejection of claims 2-5 and 7-16 is also reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-16 under 35 U.S.C. § 103 is reversed.

REVERSED

LEE E. BARRETT Administrative Patent Judge	)
MICHAEL R. FLEMING Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
STUART S. LEVY Administrative Patent Judge	)

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