United States Court of Appeals for the Federal Circuit

00-1258

(Serial No. 08/184,664)

IN RE RAYMOND C. KURZWEIL and JOHN ARMSTRONG III

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DECIDED: January 24, 2001

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Before NEWMAN, MICHEL, and GAJARSA, Circuit Judges.

MICHEL, Circuit Judge.

Raymond C. Kurzweil and John Armstrong III (collectively "Kurzweil") appeal from the decision
of the Board of Patent Appeals and Interferences ("the Board") affirming the examiner's
rejection, and holding that the invention claimed in application Ser. No. 08/184,664 is
unpatentable as obvious under 35 U.S.C. § 103. See Ex Parte Raymond C. Kurzweil and John
Armstrong III, Paper No. 26 (BPAI Dec. 8, 1999). Because the Board's factual findings on the
motivation to combine references and other facts relating to obviousness are supported by
substantial evidence, and because the Board did not err in concluding that the claims were not
allowable under § 103, we affirm.

ANALYSIS

The Board affirmed the examiner's rejection of all of the claims of Kurzweil's application for
obviousness based upon the teachings of U.S. Patent No. 5,231,670 ("Goldhor") when
combined with those of U.S. Patent No. 4,868,750 ("Kucera"). On appeal, Kurzweil argues
separately the allowability of claims 1-4, with independent claim 1 representative, and of claims

5 and 6, with independent claim 5 representative. Representative claim 1 reads (underlining as in Kurzweil's principal brief):

1. Apparatus for generating text from speech comprising:

   means for converting a received acoustic signal to a sequence of characterizing data;

   means for storing tokens representing corresponding vocabulary words to be recognized;

   means for comparing said sequence of characterizing data with at least a preselected group of said tokens thereby to identify a token which best matches the sequence and for displaying the vocabulary word corresponding to the token;

   means responsive to a first user command for extracting, from the displayed word, a root spelling;

   means for identifying and displaying a list of words incorporating said root spelling; and

   means responsive to a second user command for selecting a word from said list.

The differences between claims 1 and 5 are not material to this appeal. As admitted by Kurzweil in his principal brief, "the claim limitations that are not underlined correspond to Goldhor's system." (emphasis added). Thus, Kurzweil grounds patentability on his claimed dictation device providing correction of misrecognized speech when the user dictates two commands. When the system makes an error during dictation, the user's first command informs the system that it has misrecognized a previously spoken word. This command causes the system to display a list of alternative words. The user then speaks a second command to select the desired word from the list. Kurzweil refers to this as a "double command arrangement."

A. The Prior Art

Goldhor discloses a dictation device for converting speech into text. The user speaks into a microphone, and the device converts the speech into text which is instantly displayed to the user. One problem with prior art dictation devices was that they were controlled, in part, by the user's hands. Often a user's hands are otherwise occupied during dictation, or the user may be incapable of efficiently operating an input device by hand. Thus, an important aspect of Goldhor's invention is to allow the user to control the device through spoken commands. Goldhor, col. 1, ll. 55-68.

Goldhor also teaches that "misrecognition," i.e., conversion of oral speech input to a text word other than that desired by the user, was a problem with known dictation devices. Id. at col. 2, ll. 9-12. Goldhor discloses that:

   Another object of the present invention is to provide a system and method for

generating text from a voice input that reliably and effectively implements system functions which make it possible for the user to inform the system of misrecognitions; for the system to undo the effects of said misrecognitions; for the user to control the application by referring directly to earlier events in the dictation process; and for the system to control and modify the recognition of speech, including the ability to learn from earlier misrecognitions.

Id. at col. 2, ll. 17-26. Goldhor discloses such a device for the correction of misrecognitions, but it does not disclose the use of the misrecognized word's root-form as a basis for determining what other word may be intended by the user, as claimed by Kurzweil.

Kucera discloses a device for the analysis of digitally encoded text in order to correct errors of spelling and grammar. Kucera is not a dictation device; rather it is a computer device for manipulating textual data to correct errors. Kucera discloses the isolation and use of a misspelled word's "root" in order to identify other candidates for the desired word. Kucera, col. 6, ll. 41-65, col. 7, l. 41 - col. 8, l. 8. For example, when confronted with the text "walke," Kucera's device would drop the "e," and find "walk" in its database of known word roots. Id. at col. 8. ll. 19-20. The device would then choose alternative word-match candidates, from its dictionary of known words, containing the root "walk," such as "walks, walking, walker," etc. Id. at col. 6, ll. 42-65. Kucera also teaches that:

> [T]he invention includes improvements to existing types of non-grammar language processors. For example, an improved spelling checker according to the invention includes a spelling checker of the type wherein each erroneously spelled word is identified and a list of possibly-intended words is displayed.

Id. at col. 3, ll. 15-19.

B. Kurzweil's Arguments on Appeal

It appears that, in his reply brief, Kurzweil limited the patentability of his invention to his claimed "double command arrangement":

> The innovation here is not in speech recognition or in root extraction or in generation of lists of words from a root spelling--these things have been known. The innovation is in making these components operate together on command, in a dictation system that permits correction using a double command arrangement, an arrangement that is nowhere taught in the art of record. (emphasis added).

Kurzweil asserts that the Board employed hindsight in combining selected features from Goldhor and from Kucera. He argues that devising the "double command arrangement" would not have been routine in the art in view of Goldhor and Kucera. Kurzweil argues that:

> Like the examiner and the Board, the Director ignores the recited double command

arrangement. . . . Goldhor does not teach or suggest the double command arrangement for correcting dictation recited in the claims. . . . Kucera also does not . . . In hindsight the concept of a double command arrangement for correcting dictation seems "simple." However, the Examiner and the Board cannot randomly shop around in the references to find support for an obviousness rejection. . . . [N]either the Examiner nor the Board made findings of "specific understanding or principle" that, without knowledge of the claimed invention, would have led a person of skill in the art to make the claimed invention based on the art of record. In other words, the Examiner and the Board "fell into the trap of hindsight."

This "double command arrangement" refers to the two-step process recited in claim 1 of: (1) "means responsive to a first user command for extracting . . . a root spelling"; and then (2) "means responsive to a second user command for selecting a word from said list." Claim 5 contains a nearly identical recitation of the claimed two-step process.

We see no clear indication that Kurzweil made an argument based on the "double command arrangement" before either the examiner or the Board. Thus, it is hardly surprising that neither the examiner's rejection nor the Board's decision addressed such an argument. Because Kurzweil apparently has made it for the first time on appeal, we may decline to consider it. In re Schreiber, 128 F.3d 1473, 1479, 44 USPQ2d 1429, 1433 (Fed. Cir. 1997) ("That argument was not raised before the Board and we therefore decline to consider it for the first time on appeal."). In any event, we have considered this argument and we conclude that it is not persuasive.

1. Motivation to Combine the Prior Art References

The motivation to combine references can be inferred from the fact that they address the same problem. Pro-Mold and Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996) ("[The motivation to combine references] may also come from the nature of the problem to be solved, leading inventors to look to the references relating to possible solutions to that problem."). Since, as the Board correctly found, both Goldhor and Kucera are directed to devices for identifying and correcting erroneous text, we discern substantial evidence to support the Board's finding that one skilled in the art would be motivated to combine Goldhor and Kucera. The Board's opinion states:

> The two references are related in that they are both directed to an apparatus for identifying erroneous text. In our view, it is not material from an artisan's perspective whether the erroneous text resulted from erroneous textual input or improperly decoded speech input. We agree with the examiner that the artisan would have been motivated to search for alternative candidates in Goldhor using the candidate technique suggested by Kucera.

Paper No. 26 at 7-8 (emphasis added).

Kucera states that its claimed root-based text correction system "includes a spelling checker of the type wherein each erroneously-spelled word is identified and a list of possibly intended

words is displayed." Kucera, col. 3, ll. 15-19. Goldhor states that word misrecognitions, i.e., misspellings, are a problem with prior art dictation systems, and that one of the goals of its system is to provide for the correction of misrecognitions identified to the system by the user. Goldhor, col. 2, ll. 9-26. Thus, these statements provide substantial evidentiary support for the Board's finding of fact that one of ordinary skill in the art would have been motivated to combine Kucera's spelling checker based upon root-matching with Goldhor's dictation system in order to provide improved correction of misrecognized words, one of the goals expressed in Goldhor. Id. at col. 2, ll. 17-26.

Appellant fails to specify how the Board relied upon hindsight. We hold the Board relied upon the clear motivation to improve the word match error correction feature of the dictation system disclosed in Goldhor by adding the more advanced root-form technique taught in Kucera.

2. Goldhor Discloses A "Double Command Arrangement"

The utilization of multiple user commands is taught in Goldhor, and would necessarily be included in any combination of Goldhor and Kucera. Goldhor discloses, both generally and quite specifically, the use of user commands--oral speech--to implement a dictation system. Goldhor, col. 9, ll. 22-29, col. 12, l. 65 - col. 13, l. 6 ("[A] principal feature of the present invention is the ability of the system to effectively control and modify system operation through verbal commands that allow the user to refer directly to earlier events in the dictation process."). For example, Goldhor teaches the "TRY AGAIN" command that a user utters in order to cause Goldhor's system to re-attempt a word match in the event of an initial mismatch. Goldhor, col. 12, ll. 29-44 ("The intent of the phrase is to cause the effect of the previous voice command to be undone."). Goldhor further teaches that "the entire candidate set can be retrieved for display to enable a user of the system to select the correct candidate or for further processing." Goldhor, col. 5, ll. 53-55. The selection, of course, requires a second voice command. This constitutes a "double command arrangement," with "try again" constituting the first command, and selection of the desired word from the resulting list constituting the second command.

Therefore, we hold it would have been obvious to one of ordinary skill in the art to combine the root-form analysis teaching of Kucera with the system described in Goldhor through the use of user commands, including a "double command arrangement," as taught by Goldhor. The use of two commands is simply unavoidable when one implements Kurzweil's claimed combination of Kucera's root-matching process and the dictation system disclosed in Goldhor.

CONCLUSION

We have fully considered all other arguments raised by Kurzweil, and have found them to be unpersuasive. The Board's decision that the invention of claims 1-6 would have been obvious is, as to factual findings, supported by substantial evidence, and the Board's obviousness conclusion was legally correct. Accordingly, the decision of the Board must be, and is, affirmed.