

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DANIEL P. HOMILLER

Appeal 2007-2145
Application 10/160,600¹
Technology Center 2600

Decided: February 7, 2008

Before JOHN MARTIN, HOWARD B. BLANKENSHIP, and MARC S. HOFF, *Administrative Patent Judges*.

Opinion for the Board filed by *Administrative Patent Judge* HOFF.

Opinion concurring filed by *Administrative Patent Judge* BLANKENSHIP.

HOFF, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellant appeals under 35 U.S.C. § 134 from a Final Rejection of claims 1-4, 8, 11-19, and 24-35. We have jurisdiction under 35 U.S.C. § 6(b).

¹ Application filed May 31, 2002. The real party in interest is Sony Ericsson Mobile Communications AB.

We affirm.

Appellant's invention relates to method and apparatus for handwriting recognition, and editing of handwritten symbols (Specification 1). A symbol provided by a user is sensed and compared to a set of known symbols. A first one of the known symbols which may correspond to the sensed symbol is selected and displayed to the user. In response to receiving an indication from the user that the displayed first known symbol does not correspond to the provided symbol, a second one of the known symbols which may correspond to the sensed symbol is selected and displayed to the user (Specification 1-2).

Claim 1 is exemplary:

1. A method of operating a symbol recognition system for a set of known symbols, the method comprising:

sensing an indication of a desired symbol;

selecting a first one of the known symbols which may correspond to the desired symbol based on developing a score indicative of the closeness of a comparison of the desired symbol to each of the set of known symbols;

storing a plurality of the scores from the comparisons of the desired symbol to each of the set of known symbols;

displaying the first one of the known symbols;

receiving an indication that the displayed first one of the known symbols does not correspond to the desired symbol;

selecting a second one of the known symbols which may correspond to the desired symbol based upon the stored scores from the

comparisons and the received indication that the displayed first one of the known symbols does not correspond to the desired symbol; and

displaying the second one of the known symbols.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Yamakawa	US 4,672,677	Jun. 9, 1987
Seybold	US 6,005,973	Dec. 21, 1999
Takasu	US 6,671,403 B1	Dec. 30, 2003

Claims 1, 2, 11, 12, 14-17, 25-29, and 31-35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamakawa in view of Takasu.

Claims 3, 4, 8, 13, 18, 19, 24, and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamakawa in view of Takasu and Seybold.

Appellant contends that the Examiner erred in his rejections because the asserted combination of Yamakawa and Takasu (and Seybold) does not teach storing a plurality of scores of comparisons of the closeness of a sensed desired symbol to a set of known symbols, or selecting a second one of the known symbols which may correspond to the desired symbol based upon the stored scores from the comparisons and the received indication that the displayed first one of the known symbols does not correspond to the desired symbol (Br. 7:10-15). The Examiner contends the claims are properly rejected because Yamakawa teaches the great majority of the claim limitations; Takasu is relied upon only to teach “storing a plurality of the

scores from the comparisons of the desired symbol to each of the set of known symbols” (Ans. 16).

Rather than repeat the arguments of Appellant or the Examiner, we make reference to the Briefs and the Answer for their respective details.

ISSUE

The principal issue in the appeal before us is whether the Examiner erred in holding that it would have been obvious to modify Yamakawa to include storing a plurality of scores from comparisons of a desired symbol to each of a set of known symbols, as taught by Takasu.

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

The Invention

1. According to Appellant, he has invented method and apparatus for handwriting recognition, and editing of handwritten symbols (Specification 1).

2. A symbol provided by a user is sensed and compared to a set of known symbols. A first one of the known symbols which may correspond to the sensed symbol is selected and displayed to the user. In response to receiving an indication from the user that the displayed first known symbol does not correspond to the provided symbol, a second one of the known symbols which may correspond to the sensed symbol is selected and displayed to the user (Specification 1-2).

Yamakawa

3. Yamakawa teaches character and figure processing for the recognition of on-line handwritten characters (col. 1, ll. 49-64; col.2 , ll. 45-49).

4. Yamakawa's character recognition process determines a number of proposed characters (col. 5, ll. 30-40).

5. Yamakawa teaches displaying a first set of proposed characters (e.g., three at a time) to a user, who may either select one of the proposed characters as matching his input character, or may select the Else button to be presented with the next set of proposed characters (see Figs. 6(A)-1 to 6(A)-3 and Figs. 7(A) to 7(E), and col. 5, l. 38 to col. 6, l. 14).

6. In Yamakawa, the recognition process is completed (Fig. 6(A)-1, step S2) before any proposed characters are presented to a user (Fig. 6(A)-2, steps S9 to S11 and S13 to S15).

Takasu

7. Takasu teaches pattern (e.g. handwriting) recognition including a plurality of different recognition processing operations for the pattern to be recognized, acquiring recognition candidates and similarity amounts in each recognition processing operation, and converting the similarity amounts into a scale common to the different recognition processing operations (col. 2, ll. 8-19).

8. Takasu teaches sorting characters in ascending order of recognition scores, thus generating a recognition candidate sequence (col. 5, ll. 57-62; col. 6, ll. 30-32).

9. A recognition result is obtained as a sequence of pairs of character codes and recognition scores in the order of candidates (col. 5, ll. 57-62).

10. The recognition result is stored in a memory buffer (col. 5, ll. 61-62; col. 6, ll. 32-33).

Seybold

11. Seybold teaches a handwriting recognition process in which candidate words are developed both through dictionary entry comparisons and most likely string of characters analysis techniques (col. 2, ll. 31-35).

PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a prima facie case of obviousness. *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). The Examiner can satisfy this burden by showing some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR Int'l. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the Appellant. *Piasecki*, 745 F.2d at 1472. Thus, the Examiner must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the Examiner's conclusion.

The motivation for combining reference teachings is not limited to the problem the patentee was trying to solve: "any 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.” *In re Icon Health and Fitness Inc.*, 496 F.3d 1374, 1380 (Fed. Cir. 2007) (quoting *KSR*, 127 S. Ct. at 1742). *See also Leapfrog*, 485 F.3d at 1162 (holding it “obvious to combine the Bevan device with the SSR to update it using modern electronic components in order to gain the commonly understood benefits of such adaptation, such as decreased size, increased reliability, simplified operation, and reduced cost”); *Dystar*, 464 F.3d at 1368 (“[A]n implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the ‘improvement’ is technology-independent and the combination of references results in a product or process that is more desirable, for example because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient.”).

Furthermore, a reference may be understood by the artisan to be suggesting a solution to a problem that the reference does not discuss. *See KSR*, 127 S. Ct. at 1742 (“The second error of the Court of Appeals lay in its assumption that a person of ordinary skill attempting to solve a problem will be led only to those elements of prior art designed to solve the same problem. . . . Common sense teaches . . . that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle. . . . A person of ordinary skill is also a person of ordinary creativity, not an automaton.”).

ANALYSIS²

Appellant argues³ that the asserted combination of Yamakawa and Takasu (and Seybold) does not teach storing a plurality of scores of comparisons of the closeness of a sensed desired symbol to a set of known symbols, nor selecting a second one of the known symbols which may correspond to the desired symbol based upon the stored scores from the comparisons and the received indication that the displayed first one of the known symbols does not correspond to the desired symbol (Br. 7).

Appellant further argues that Takasu teaches storing “**only the result**” of the recognition comparison process, rather than a plurality of scores of comparisons of the closeness of a sensed desired signal to a set of known symbols (Br. 9). Finally, Appellant argues that Takasu does not teach storing recognition scores for later reuse (Reply Br. 2).

The Examiner admits that Yamakawa does not teach the storage of a plurality of scores of comparisons of the closeness of a sensed desired signal to a set of known symbols (Ans. 4). The Examiner looks to Takasu to supply the missing teaching. Takasu teaches a character recognition system, including sorting characters in ascending order of recognition scores, thus generating a recognition candidate sequence (FF 8). A recognition result is

² Appellant presents a single common argument for all claims. We therefore select claim 1 as representative of the appealed claims.

³ Appellant’s discussion of claims 1, 17, and 28 makes reference to elements allegedly not taught or suggested by the Seybold reference. As the Examiner has explained that his mention of Seybold in the Final Rejection of these claims was unintentional, we will treat these claims as standing rejected over Yamakawa in view of Takasu, as the Examiner has done in the Answer.

obtained as a sequence of pairs of character codes and recognition stores (*sic*, scores) in the order of candidates (FF 9). The recognition result (i.e., the aforementioned plurality of characters and their recognition scores) is stored in a memory buffer (FF 10). The Examiner concludes that the modification would have been obvious in order to enable the user to “save time and quickly move on to inserting the next symbol in the sentence” (Ans. 17).

We agree with the Examiner that the references collectively teach storing a plurality of the scores” which are “indicative of the closeness of a comparison of the desired symbol to each of the set of known symbols,” as required by claim 1. Yamakawa’s recognition process determines a number of proposed characters (FF 4). Yamakawa does not explicitly teach presenting proposed characters in the order of their closeness to the input character. Claim 1, however, does not require such ordering, but merely presentation of a first possible symbol based on a score indicative of the closeness of comparison. We infer that Yamakawa selects proposed characters if their closeness to the input character is greater than some unspecified minimum threshold.

Yamakawa further teaches displaying a first set of proposed characters (e.g., three at a time) to the user, who may either select one of the proposed characters, or may select the “Else” button to be presented with the next set of characters (FF 5). We construe any one of the proposed characters displayed by Yamakawa as meeting the limitation of “selecting a first one of the known symbols which may correspond to the desired symbol.” Because Yamakawa discloses that the recognition process is

completed before any proposed characters are presented to a user (FF 6), Yamakawa necessarily teaches *storage*, in some form, of information indicating which characters are close enough to the input characters to merit presentation to the user. We therefore find that Yamakawa inherently teaches storage of information indicative of the closeness of a comparison of the desired symbol to each of the set of known symbols (i.e., information identifying the set of characters to be displayed).

Yamakawa therefore teaches all of the elements of the claimed invention, except for storing (numerical) scores indicative of the closeness of comparison of the desired symbol to the symbols to be displayed, and “selecting a second one of the known symbols which may correspond to the desired symbol *based upon the stored scores from the comparisons.*”

The Examiner found, and we agree, that Takasu teaches developing scores indicative of closeness of comparison, and storing those scores in memory (FF 7, 8, 10). With regard to selecting the second symbol based upon the stored scores from the comparisons, as noted *supra*, Yamakawa determines, before presenting any proposed character to the user, the full set of characters which may correspond to the input character (FF 6).

Yamakawa teaches that, upon selection of the Else button, the system shall present the next set of three (or less) proposed characters for the user’s review (FF 5). We construe any one of the proposed characters displayed by Yamakawa in that circumstance as corresponding to the “second one the known symbols” required by the claim. We therefore find that Yamakawa teaches selecting a second one of the known symbols which may correspond to a desired symbol based upon stored information regarding the (previously

performed) comparisons. Takasu is relied upon, again, to teach numerical scores indicative of the closeness of comparison, and storage of such scores. As noted *supra*, we agree with the Examiner's conclusion that it would have been obvious to modify Yamakawa include the teachings of Takasu into Yamakawa, because prioritizing the most desired symbols so the ones which are most likely the desired symbol are displayed first would have saved the user time, enabling the user to quickly move on to inserting the next symbol in the sentence. If there were no scoring, the system would just be suggesting random characters, which would be unworkable (Ans. 17).

We disagree with Appellant's general argument that there is no clear and particular evidence of motivation or suggestion to combine these references (Br. 10). Appellant characterizes Takasu as merely teaching converting results from two different pattern recognition methods into a common scale (*id.*). While Takasu does teach such conversion, Takasu also teaches pattern (i.e., character) recognition in the first instance, before the conversion to a common scale takes place (FF 7). Because Yamakawa and Takasu are commonly directed to analyzing input characters or symbols and attempting to determine known characters or symbols matching the input, the person having ordinary skill in the art would have had ample motivation to combine them in order to achieve the instant invention.

We therefore affirm the rejection of claim 1, and independent claims 17 and 28 grouped therewith, as well as claims 2-4, 8, 11-16, 18, 19, 24-27, and 29-35, dependent therefrom and not separately argued.

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CONCLUSION OF LAW

We conclude that Appellant has not shown that the Examiner erred in rejecting claims 1-4, 8, 11-19, and 24-35. Claims 1-4, 8, 11-19, and 24-35 are unpatentable.

DECISION

The Examiner's rejection of claims 1-4, 8, 11-19, and 24-35 is affirmed.

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

BLANKENSHIP, *Administrative Patent Judge*, Concurring.

I write separately because, in my view, there is a substantial question with respect to whether claims 1-16 meet the threshold requirements for statutory subject matter under 35 U.S.C. § 101.

Representative claim 1 is nominally drawn to a process. However, there is no physical transformation of anything to another state or thing. “A process is . . . an act, or series of acts, performed upon the subject matter to be transformed and reduced to a different state or thing.” *Cochrane v. Deener*, 94 U.S. 780, 788 (1877). “Transformation and reduction of an article “to a different state or thing” is the clue to the patentability of a process claim that does not include particular machines.” *Diamond v. Diehr*, 450 U.S. 175, 184 (1981) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972)).⁴

Although there are cases suggesting that the lack of transformation is not determinative with respect to whether a claimed process is statutory, those cases involved inventions that at least used *machines* to transform *data*. For example, our reviewing court in *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1357 (Fed. Cir. 1999), set forth (citing *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994) (en banc)) that a §

⁴ The statutory requirements for a "process" were recently re-affirmed by our reviewing court in *In re Comiskey*, 499 F.3d 1365, 1376-77 (Fed. Cir. 2007). The invention in *Comiskey* could be characterized as a "business method"; however, the underlying requirements for a statutory "process" are the same regardless of how the claimed method might be characterized. "[P]atentability does not turn on whether the claimed subject matter does 'business' instead of something else." *Id.* at 1374 (quoting *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1377 (Fed. Cir. 1998)).

101 inquiry is directed to the determination of whether the claimed subject matter as a whole is a disembodied mathematical concept representing nothing more than a “law of nature” or an “abstract idea,” or if the mathematical concept has been reduced to some practical application rendering it “useful.” A claimed process that produces a useful, concrete, tangible result without pre-empting other uses of the mathematical principle falls within the scope of § 101. *AT&T Corp.* at 1358. The process held to be statutory in *AT&T Corp.*, however, required the use of switches and computers. *See, e.g., id.* at 1358 (AT&T’s claimed process used “switching and recording mechanisms” to create a “signal” useful for billing purposes).

In this case, Appellant’s disclosure provides embodiments in which a machine is used for implementing the steps of claim 1. However, our reviewing court has repeatedly warned against confining the claims to specific embodiments described in the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc). Moreover, the Board must give claims their broadest reasonable construction. *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000).

Appellant’s disclosure does not re-define or otherwise limit the broad claim terms such as “sensing,” “selecting,” “storing,” or “displaying,” all of which may be performed without the use of a machine. While a court might read the terms in such a way to preserve patent validity, during prosecution in the USPTO an applicant can amend the claims to remove any ambiguity with respect to what the claims actually require. “An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be

removed, as much as possible, during the administrative process.” *In re Zletz*, 893 F.2d 319, 322 (Fed. Cir. 1989).

While claim 1 reads on statutory subject matter, the claim is so broad as to read on nonstatutory subject matter. In my estimation, such a claim should be rejected when in the USPTO and subject to amendment.

In any event, while the presumed result of “displaying the second one of the known symbols” might be considered “useful” in a general sense, such a “result” is not of the type of predictable, repeatable results that have been held useful, concrete, and tangible. Claim 1 seems to represent mere abstraction.⁵ As the Supreme Court has made clear, “[a]n idea of itself is not patentable.” *In re Warmerdam*, 33 F.3d 1354, 1360 (1994) (quoting *Rubber-Tip Pencil Co. v. Howard*, 87 U.S. (20 Wall.) 498, 507, 22 L.Ed. 410 (1874)).

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⁵ Compare, for example, instant claim 17 -- which includes specific circuits and a memory -- limited to a practical application of the abstract idea.