UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROGER KENNETH ABRAMS

Appeal No. 2006-1093
Application No. 09/842,471

ON BRIEF

Before THOMAS, JERRY SMITH, and HOMERE, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1-55, which constitute all the claims pending in this application.

The invention pertains to improving the use of pointing devices (e.g., a mouse) and selection of icons on graphical user interfaces by physically impaired users. Specifically, the invention includes a method and system that acquires data corresponding to the motion of a pointing cursor of a pointing device used to move the cursor from a first source position to a first destination position on a

display. A set of motion vectors corresponding to such motion is generated and stored along with the first destination position referenced to the first source position. In one embodiment, a destination point icon is predicted by comparing a motion vector imparted by a user to the cursor to a previously acquired motion vector. The destination point icon is then highlighted until the user actuates the icon.

Representative claim 1 is reproduced as follows:

1. A method for improving a selection of a graphic user interface (GUI) icon with a pointing device, comprising the steps of:
acquiring data corresponding to a motion of a pointing cursor on a display, said motion of said pointing cursor corresponding to a pointing device used to move said pointing cursor from a first source position to a first destination position on said display;
generating a set of motion vectors corresponding to said motion of said pointing cursor from said first source position to said first destination position; and
storing said set of motion vectors and said first destination position referenced to said first source position.

The examiner relies on the following reference:

Robertson et al. (Robertson)	5,598,183	Jan. 28, 1997

The following rejection is on appeal before us:

Claims 1-55 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Robertson.

Rather than repeat the arguments of appellant or the examiner, we make reference to the briefs and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of anticipation relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellant's arguments set forth in the briefs 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 disclosure of Robertson does not fully meet the invention as set forth in claims 1-46, 48, 51, and 54. We reach the opposite conclusion, however, with respect to claims 47, 49, 50, 52, 53, and 55. Accordingly, we affirm-in-part.

Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.); cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore and Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). Only those arguments actually made by appellant have been considered

in this decision. Arguments which appellant could have made but chose not to make in the brief have not been considered and are deemed to be waived [see 37 CFR § 41.37(c)(1)(vii)(2004)].

The examiner has indicated how the claimed invention is deemed to be fully met by the disclosure of Robertson [answer, pages 3-7]. Regarding independent claims 1, 17, and 33, appellant argues that Robertson does not disclose generating a set of motion vectors corresponding to the motion of the pointing cursor from the first source position to the first destination position [brief, page 6]. Appellant argues, among other things, that Robertson discloses a correction vector that is generated when the cursor is in proximity to a control and such a correction vector is not the same as generating a set of vectors corresponding to the motion of the pointing cursor from a source position to a destination position [brief, page 6].

The examiner responds that Robertson inherently generates a set of motion vectors corresponding to the cursor's motion. According to the examiner, during cursor movement, the system stores all positions that the cursor passes through and generates a set of vectors from all these positions from the first position to the destination position [answer, page 8].

Appellant also argues that Robertson does not disclose storing the set of motion vectors and the first destination position referenced to the first source position as claimed [brief, page 7]. Appellant notes that Robertson teaches storing the X and Y coordinates of the cursor's current and intended positions.

Such a technique, according to appellant, is not the same as storing vectors [brief, pages 7 and 8; reply brief, page 4]. The examiner responds that the limitation is fully met because Robertson stores all positions to which the cursor moves as the cursor moves from a first source position to the intended destination position [answer, page 10].

We will not sustain the examiner's rejection. In our view, the disclosure of Robertson does not disclose storing a set of motion vectors and the first destination position referenced to the first source position as claimed in independent claims 1, 17, and 33 [emphasis added].

In Robertson, the most relevant embodiment is that shown in Figs. 6-8. In that embodiment, once the cursor enters the control region 152, a correction vector with X and Y coordinates is calculated and added to the cursor control signals. The correction vector 156 causes the cursor to move toward the center point of control 150 while the cursor is within the control region 152 (i.e., in proximity with the control) [Robertson, Fig. 6 and col. 11, lines 8-50]. As shown in Fig. 7, the cursor's position is continually updated in this manner so that the cursor appears to move across the display with a smooth motion [Robertson, Fig. 7 and col. 12, lines 27-40].

Although we agree with the examiner that Robertson inherently generates a set of motion vectors corresponding to the cursor's motion as explained on

Pages 7 and 8, infra, of this opinion,[1] Robertson does not reasonably teach nor suggest storing the set of motion vectors and the first destination position referenced to the first source position as claimed. Calculating a deviation in a cursor's X and Y coordinates derived from the X and Y components of a correction vector to update the cursor's X and Y coordinates in Robertson does not necessarily entail storing a set of motion vectors and the first destination position referenced to the first source position as claimed.

Furthermore, we disagree with the examiner that Robertson inherently stores a set of motion vectors as the cursor moves from one position to another. Rather, the X and Y coordinates of such motion are stored in Robertson's system. Although motion vectors can be calculated from a cursor's X and Y coordinates as the cursor moves,[2] there is no express or implied teaching in Robertson to store the generated vectors and the first destination position referenced to the first source position as claimed.[3]

Consequently, Robertson fails to disclose -- expressly or inherently -- every limitation recited in independent claims 1, 17, and 33. Accordingly, we will not sustain the examiner's anticipation rejection of those claims. Since we do not sustain the examiner's rejection of independent claims 1, 17, and 33, we likewise

[1] See also Robertson, Fig. 6 (showing a set of correction vectors 156 that point to the center of control 150).
[2] See Pages 7 and 8, infra, of this opinion.
[3] We note, however, that the question of whether storing motion vectors corresponding to cursor movement in lieu of storing the cursor's X and Y coordinates corresponding to such movement would have been obvious to the skilled artisan at the time of the invention constitutes an obviousness issue under 35 U.S.C. § 103(a) that is not before us.

do not sustain the examiner's rejection of dependent claims 2-16, 18-32, and 34-46.

We reach an opposite conclusion, however, with respect to independent claims 47, 50, and 53. These claims call for, in pertinent part, predicting a destination point icon by comparing a motion vector imparted by a user to a pointing cursor to a previously acquired motion vector acquired from the user moving the cursor. Claims 47, 50, and 53, however, do not require storing a set of motion vectors and the first destination position referenced to the first source position as discussed above in connection with independent claims 1, 17, and 33.

At the outset, we note that merely moving a cursor from one point to another fully meets the limitation reciting a "motion vector imparted by a user to a pointing cursor." That is, when a user moves a cursor from one point to another (i.e., from a source to a destination), it is necessarily vector movement because vectors with a definite magnitude and direction are established between at least two successive points along the cursor's path of travel. Thus, as a user moves the cursor along a path, new vectors are continually created using the cursor's current coordinate and its immediately-preceding coordinate. Moreover, determining a change in direction of a particular path taken by the cursor necessarily requires comparing not only coordinates along the path, but also vectors created between those coordinates.

In view of this analysis, we conclude that the scope and breadth of the claim language does not preclude the disclosure of Robertson. In Fig. 4, for example, the motion vector resulting from the user's moving the cursor from one point to another would be necessarily compared to a previously-acquired motion vector to predict the "destination point icon" (i.e., control).[4]

Furthermore, in Fig. 6 of Robertson, the motion vectors acquired while the user moves the cursor along paths 158 and 164 are considerably different than those acquired in the control region 152 in proximity with control 150. That is, the vectors created along the straight path 158 have at least a substantially constant direction, unlike the vectors created along curved path 162. Thus, the existence of the “destination point icon” (control 150) would necessarily be predicted by comparing the respective motion vectors from path 162 to path 158.

In fact, such a result follows from comparing the successive vectors created in path 162 alone. In this case, as the user moves the cursor along the curved path 162 in the vicinity of control 150, each successive vector will have at least a different direction. The existence of the control 150 would necessarily be predicted by comparing the respective motion vectors.

In short, claims 47, 50, and 53 are fully met by the disclosure of Robertson. Accordingly, the examiner’s rejection of independent claims 47, 50, and 53 is sustained.

[4] The limitation “destination point icon” fully reads on the control given the limitation's broadest reasonable interpretation.

We will also sustain the examiner's rejection of claim 49 because the claim also fully reads on Robertson. Specifically, the claim merely broadly recites that motion of the pointing cursor is "modified" as a user moves a pointing device from a source point icon to the predicted destination point icon. The claim, however, does not specify how such modification is achieved. The scope and breadth of the claim does not preclude mere cursor movement from one control to another in Robertson (i.e., the cursor's motion is "modified" at least when the user starts and stops moving the cursor). Accordingly, the examiner's rejection of claim 49 is therefore sustained.

We will not, however, sustain the examiner's rejection of dependent claims 48, 51, and 54. The examiner indicates that the "NEW," "OPEN," and "CLOSE" buttons constitute destination point icons that are highlighted when the cursor moves to them [answer, page 13]. We disagree with the examiner that this feature reasonably constitutes highlighting a destination point icon responsive to the prediction step in the manner claimed essentially for the reasons noted by the appellant. Accordingly, the examiner's rejection of claims 48, 51, and 54 is therefore reversed.

In summary, we have not sustained the examiner's rejection with respect to claims 1-46, 48, 51, and 54 on appeal. We have, however, sustained the

examiner's rejection of claims 47, 49, 50, 52, 53, and 55. Therefore, the decision of the examiner rejecting claims 1-55 is affirmed-in-part.[5]

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

JAMES D. THOMAS Administrative Patent Judge	)	
JERRY SMITH Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JEAN R. HOMERE Administrative Patent Judge	)	

JS/jaj/rwk

[5] As an ancillary observation, we note that (1) no antecedent basis exists for "said PROM" in claims 33 and 53, and (2) no period exists at the end of claim 51. Because the parties did not raise these issues on appeal, they are therefore not before us. In an ex parte appeal, "the Board is basically a board of review – we review…rejections made by patent examiners." Ex parte Gambogi, 62 USPQ2d 1209, 1211 (Bd. Pat. App. & Int. 2001). Consequently, we leave the issue of whether the appellant has satisfied the requirements of MPEP §§ 2173.05(e) and 608.01(m) to the examiner and the appellant.

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