

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MIKKO LINDSTROM
and
JORMA TAIJONLATHI

Appeal No. 1999-0086
Application 08/612,820

ON BRIEF

Before THOMAS, KRASS, and RUGGIERO, Administrative Patent Judges.

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal from the final rejection of claims 1-33, which are all of the claims pending in the present application.

The claimed invention relates to the maximization of the

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production run speed of a sheet fabrication machine in which historical data pertaining to machine positioning parameters is collected and stored in a database in machine memory. This historical data is retrieved from the database and utilized by the system controller to calculate the maximum allowable speed for each machine positioning move.

Claim 1 is illustrative of the invention and reads as follows:

1. A method of producing parts from a worksheet in at least one sheet fabrication machine comprising the steps of:

(a) determining a number of parameters which affect each positioning move by said machine to produce each part from said worksheet;

(b) storing in a memory means available for said machine historical data indicative of how each of said parameters affects the accuracy of said each part produced from said worksheet by said machine;

(c) inputting parameter values based on said stored historical data to a processor means of said machine to calculate positioning parameters providing for maximum allowable speed for said each positioning move by said machine to produce said each part from said worksheet; and

(d) utilizing said calculated positioning parameters for said each positioning move to optimize the minimum safe positioning time for said each positioning move so that each part is produced with the requisite accuracy from said worksheet at the fastest allowable production speed.

The Examiner relies on the following prior art:

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Niwa
20, 1996

5,493,502

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Claims 1-33 stand finally rejected as being based on an inadequate disclosure under the first paragraph of 35 U.S.C. § 112. Claims 1 and 18 stand further finally rejected under 35 U.S.C. § 102(e) as being anticipated by Niwa.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the Briefs¹ and Answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the Examiner, the arguments in support of the rejections and the evidence of anticipation relied upon by the Examiner as support for the prior art rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellants' 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

¹The Appeal Brief (Paper No. 9) was filed May 11, 1998. In response to the Examiner's Answer (Paper No. 10) dated June 3, 1998, a Reply Brief (Paper No. 12) was filed July 7, 1998, which was acknowledged and entered by the Examiner in the communication (Paper No. 13) dated July 10, 1998.

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us, that Appellants' specification in this application describes the claimed invention in a manner which complies with the requirements of 35 U.S.C. § 112. We are also of the view that the disclosure of the Niwa reference fully meets the invention as recited in claims 1 and 18. Accordingly, we affirm-in-part.

We first consider the Examiner's 35 U.S.C. § 112, first paragraph, rejection of the appealed claims for lack of enablement. In order to comply with the enablement provision of 35 U.S.C. § 112, first paragraph, the disclosure must adequately describe the claimed invention so that the artisan could practice it without undue experimentation. In re Scarbrough, 500 F.2d 560, 566, 182 USPQ 298, 305 (CCPA 1974); In re Brandstadter, 484 F.2d 1395, 1404, 179 USPQ 286, 293 (CCPA 1973); and In re Gay, 309 F.2d 769, 774, 135 USPQ 311, 316 (CCPA 1962). If the Examiner has a reasonable basis for questioning the sufficiency of the disclosure, the burden shifts to Appellants to come forward with evidence to rebut this challenge. In re Doyle, 482 F.2d 1385, 1392, 179 USPQ 227, 232 (CCPA 1973), cert. denied, 416 U.S. 935 (1974); In re Brown, 477 F.2d 946, 950, 177 USPQ 691, 694 (CCPA 1973);

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and In re Ghiron, 442 F.2d 985, 992, 169 USPQ 723, 728 (CCPA 1971). However, the burden is initially upon the Examiner to establish a reasonable basis for questioning the adequacy of the disclosure. In re Strahilevitz, 668 F.2d 1229, 1232, 212 USPQ 561, 563 (CCPA 1982); In re Angstadt, 537 F.2d 498, 504, 190 USPQ 214, 219 (CCPA 1976); and In re Armbruster, 512 F.2d 676, 677, 185 USPQ 152, 153 (CCPA 1975).

The Examiner asserts (Answer, pages 3 and 4) a lack of enabling disclosure with regard to the details of how the stored historical data impacts the calculations which provide for the maximum allowable speed for each positioning move. In addition, the Examiner asserts a lack of details regarding the implementation of the fuzzy logic module in the context of the claimed invention.

We have reviewed Appellants' disclosure which, in our view, provides a detailed description of the incorporation of stored historical data in the development of the system control signals at pages 18-24 of the specification. Further, the Examiner has provided no evidence to support the assertion that such incorporation of historical data is so

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unconventional so as to require more than a "black box" description of the fuzzy logic module. It is our opinion that the level of skill relative to computerized numerical control (CNC) systems at the time of filing of Appellants' application would enable the skilled artisan to implement the claimed invention without undue experimentation. Accordingly, we do not sustain the Examiner's rejection of the appealed claims under the enabling provisions of the first paragraph of 35 U.S.C. § 112.

Turning to a consideration of the Examiner's 35 U.S.C. § 102(e) rejection of claims 1 and 18, we note that 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 Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.); cert. dismissed, 468 U.S. 1228 (1984); W. L. Gore and Assoc, Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

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With respect to independent method claim 1, the Examiner has indicated (Answer, page 5) how the various limitations are read on the disclosure of Niwa. In particular, the Examiner points to the description at column 13, line 27 to column 14, line 57 in Niwa.

After careful review of the Niwa reference in light of the arguments of record, we are in agreement with the Examiner's position as stated in the Answer. Appellants' arguments in response (Brief, pages 16-18) assert that each of the steps (a) through (d) in claim 1 is not disclosed in Niwa. We find none of Appellants' arguments to be persuasive.

With respect to step (a) of claim 1 which recites "determining a number of parameters which affect each positioning move . . . from said worksheet;. . . .", Appellants contend that, in the excerpt from Niwa cited by the Examiner, only a number of feedrates related to tool position relative to the workpiece are disclosed. In our view, however, notwithstanding the fact that the values L1-L4 in Niwa are distances and not feedrates as argued by Appellants, these distance values L1-L4 along with the associated feedrates F and the tool radius r qualify as a "number of

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parameters" which effect each positioning move. Similarly, as disclosed by Niwa in relation to the positioning operations for machining a corner of a workpiece as illustrated in the operations of Rules 1 and 2 in Figures 17(a) and 17(b), the distances, feedrates, and corner bevel angles are all parameters which effect the positioning of the tool. Further, in our opinion, the turning and milling operations specifically disclosed by Niwa are machining operations which "produce each part from said worksheet" as broadly set forth in appealed claim 1.

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As to the storing of historical data in step (b) of claim 1, Appellants contend that the Rules described by Niwa are not historical data. We do not agree. As illustrated in Figures 17(a) and 17(b) of Niwa, the proper deceleration rate for a tool as it approaches a workpiece corner is established according to rules stored in knowledge base 25. These rules are developed based on the "experience and know-how of an expert" (Niwa, column 6, line 30) and "represent the knowledge of experts who are familiar with the characteristics of complicated controlled object" (Niwa, column 7, lines 7 and 8). In our view, this expert know-how would inevitably and inherently reflect data gained through historical experience with the machining operations in question.

With respect to steps (c) and (d) of claim 1, Appellants argue that the passage from Niwa (column 14, lines 24-57) cited by the Examiner discloses only the reading by inference section 26 of rules from knowledge base 25. We find however, that it is precisely this description of the operation of Niwa's inference section which meets the requirements of steps (c) and (d) of claim 1. In other words, parameter values such

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as distance and feedrate are extracted from the deceleration ratio rule stored in the knowledge base and input to the system processor to calculate the maximum allowable speed and, accordingly, the optimum minimum positioning time, as the tool approaches a workpiece corner.

We further disagree with Appellants (Brief, page 18) that the Examiner has combined several embodiments in Niwa in making the anticipatory rejection. From our reading of Niwa, we are inclined to agree with the Examiner that, although Niwa uses the term "embodiment" when discussing the various features of the disclosed invention, these "embodiments" are in actuality variations of the same tool positioning embodiment. Notwithstanding this interpretation of the term "embodiment" in Niwa, it is our view that the description of the cornering operation alone illustrated in Niwa's Figures 17(a) and (b) meets all of the requirements of appealed claim 1 as discussed supra.

In view of the above discussion, since all of the claimed limitations are present in the disclosure of Niwa, the Examiner's 35 U.S.C. § 102(e) rejection of independent claim 1 is sustained.

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With regard to apparatus claim 18 which contains the same historical data features as method claim 1, we sustain the Examiner's 35 U.S.C. § 102(e) rejection of this claim as well. We find Appellants' argument (Brief, page 19) that Niwa's feedrate calculations are not germane to the worksheet moving and machining operation recited in claim 18 to be without merit. In our view, Niwa is clearly concerned with the relative movement between a machine tool and a workpiece (Niwa, Abstract, lines 5-9). Further, Niwa's calculated feedrate in relation to, for example, the cornering operation illustrated in Figures 17(a) and (b) has clear relevance to the "movement and machining" of a workpiece as set forth in claim 18.

In summary, we have not sustained the Examiner's 35 U.S.C. § 112 rejection of claims 1-33, but we have sustained the 35 U.S.C. § 102(e) rejection of claims 1 and 18. Therefore, the Examiner's decision rejecting claims 1-33 is affirmed-in-part.

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

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AFFIRMED-IN-PART

JAMES D. THOMAS)
Administrative Patent Judge)
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JOSEPH F. RUGGIERO)
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