

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KENNETH P. PARKER

Appeal 2007-4092
Application 10/292,267
Technology Center 2100

Decided: March 24, 2008

Before HOWARD B. BLANKENSHIP, ST. JOHN COURTENAY III, and
THU ANN DANG, *Administrative Patent Judges*.

BLANKENSHIP, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1-14, of which claims 1, 3, 6, and 9-14 remain rejected. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm, and enter new grounds of rejection in accordance with 37 C.F.R. § 41.50(b).

Background

Appellant's invention relates to Boundary-Scan testing. One may use Boundary-Scan testing to diagnose interconnect defects (e.g., shorts and opens) in electrical circuit assemblies. IEEE Standard 1149.1 defines a standard for Boundary-Scan testing. According to Appellant, IEEE Standard 1149.1 has become outdated because of industry implementation of AC coupled networks. IEEE Std. P1149.6 is a draft standard that addresses Boundary-Scan testing of circuit assemblies comprising AC coupled networks. (Spec. 1: 10-23.)

Appellant has devised a method evaluating a circuit assembly under test for interconnect defects which comprises assigning different binary signatures to all of the drivers and hysteretic test receiver memories of a circuit assembly under test (e.g., Fig. 4), and generating a series of Boundary-Scan test vectors, wherein each test vector comprises corresponding bits of the binary signatures. (Spec. 2: 3-22.)

Claim 1 is illustrative.

1. A method for generating Boundary-Scan test vectors, comprising:
 - a) assigning each of a set of unique binary signatures to each of a plurality of drivers and hysteretic test receiver memories of a circuit assembly under test; and
 - b) generating a series of Boundary-Scan test vectors wherein each test vector comprises corresponding bits of the binary signatures.

The Examiner relies on the following references as evidence of unpatentability.

Srinivasaiah

US 6,813,737 B1

Nov. 2, 2004

IEEE Test Technology Standards Committee, “Draft Standard for Boundary-Scan Testing of Advanced Digital Networks”, IEEE1149.6:D3.1 (6/2/2002), pp. 87-97 (“Draft Standard 1149.6”)

Claim 1 stands rejected under 35 U.S.C. § 102(a) as being anticipated by Draft Standard 1149.6.

Claims 3, 6, and 9-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Draft Standard 1149.6 and Srinivasaiah.

The rejections of claims 2, 4, 5, 7, and 8 have been withdrawn by the Examiner. (Ans. 10.)

The Standing Rejections

Appellant argues that the “assigning” and “generating” steps of instant claim 1 distinguish over Draft Standard 1149.6 because of the bit patterns that constitute the unique binary signatures and the test vectors. (App. Br. 10-12; Reply Br. 5-7.)

In claim 1, the binary digits assigned or generated are not applied to any machine, and thus cannot modify the underlying function of any machine. The generation and arrangement of the digits is directed to, at best, a mere arrangement of data -- i.e., nonfunctional descriptive material.

Even if we were to assume that claim 1 requires storage of the bits into a substrate (e.g., an electronic memory) -- it does not -- the content of the nonfunctional descriptive material would still carry no weight in the analysis of patentability over the prior art. Cf. *In re Lowry*, 32 F.3d 1579, 1583 (Fed. Cir. 1994) (“Lowry does not claim merely the information content of a memory. . . . [N]or does he seek to patent the content of

information resident in a database.”). *See also Ex parte Nehls*, <http://www.uspto.gov/web/offices/dcom/bpai/prec/fd071823.pdf>; *Ex parte Curry*, 84 USPQ2d 1272 (BPAI 2005) (nonprecedential) (Fed. Cir. Appeal No. 2006-1003, *aff’d* Rule 36 Jun. 12, 2006); *Manual of Patent Examining Procedure* § 2106.01 (8th ed., Rev. 6, Sept. 2007).

Claim 1 is drawn to the production of printed matter, with language that relates the printed matter to some later intended use, which does not serve to modify the steps of claim 1 because the content of the printed matter is entitled to no patentable weight. *See In re Gulack*, 703 F.2d 1381, 1385-86 (Fed. Cir. 1983) (“Where the printed matter is not functionally related to the substrate, the printed matter will not distinguish the invention from the prior art in terms of patentability.”). The critical question is whether there exists any new and unobvious functional relationship between the printed matter and the substrate. *Gulack*, 703 F.2d at 1386. Absent any new and unobvious functional relationship between the printed matter and the substrate, claim 1 does not distinguish over applying the printed matter to the paper in the reference applied against the claim. We sustain the rejection of claim 1.

We also sustain the rejection of claims 3, 6, and 9-14 under 35 U.S.C. § 103(a) as being unpatentable over Draft Standard 1149.6 and Srinivasaiah because Appellant relies on the arguments in support of claim 1. (App. Br. 12-13.) *See* 37 C.F.R. § 41.37(c)(1)(vii).

We designate our affirmance of the rejection of claims 1, 3, 6, and 9-14 as new grounds of rejection (37 C.F.R. § 41.50(b)).

Additional New Grounds of Rejection -- 37 C.F.R. § 41.50(b)

I

We reject claims 1 and 2 under 35 U.S.C § 101 as being directed to non-statutory subject matter.

In a § 101 analysis, the critical question must be answered: “What did the applicant invent?” *Arrhythmia Research Technology, Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1059 (Fed. Cir. 1992) (quoting *In re Grams*, 888 F.2d 835, 839 (Fed. Cir. 1989)).

Appellant’s Specification teaches assigning different binary signatures to all of the drivers and hysteretic test receiver memories of a circuit assembly under test (Fig. 3) and generating a series of Boundary-Scan test vectors, wherein each test vector comprises corresponding bits of the binary signatures (*id.*). As shown in Figure 5, the “assigning” and “generating” may be embodied by writing an array of bits (ones and zeroes) on paper (“SIGNATURES”) and drawing rectangles around columns of bits (“TEST VECTORS”). (*See* Spec. 8: 3-15.)

Representative claim 1 purports “[a] method” comprising two steps, and thus is nominally drawn to a “process.” In our initial reading of the claim, we observe there is no physical transformation of any article 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)).

There are cases suggesting that the lack of transformation is not determinative with respect to whether a claimed process is statutory. Those cases, however, 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 § 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).

Here, under a broad but reasonable interpretation of claim 1, the subject matter of the claim requires at most human thought and paperwork. The claim does not specify any steps in which the signatures or vectors are used to effect some practical application.

Claim 1 does not recite any particular way of implementing the steps. Claim 1 does not require any machine or apparatus to perform the steps. Claim 1 does not recite any electrical, chemical, or mechanical acts or

results, which are typical in traditional process claims. Claim 1 does not call for any physical transformation of an article to a different state or thing, nor does it require any transformation of data or signals. Claim 1 represents mere abstraction; i.e., a disembodied mathematical concept representing nothing more than an “abstract idea,” which has not been reduced to some practical application that renders it “useful.” As the Supreme Court has made clear, “[a]n idea of itself is not patentable.” *In re Warmerdam*, 33 F.3d 1354, 1360 (quoting *Rubber-Tip Pencil Co. v. Howard*, 87 U.S. (20 Wall.) 498, 507, 22 L.Ed. 410 (1874)).

II

We reject claim 2 under 35 U.S.C. § 102(a) as being anticipated by Draft Standard 1149.6.

Instant claim 2 describes further arrangements of the mere arrangement of data set forth in base claim 1. Claim 2 is directed to nonfunctional descriptive material, which carries no weight in the analysis of patentability over the prior art.

CONCLUSION

The rejection of claim 1 under 35 U.S.C. § 102(a) and the rejection of claims 3, 6, and 9-14 under 35 U.S.C. § 103(a) are affirmed, in what we designate as new grounds of rejection.

We reject claims 1 and 2 under 35 U.S.C. § 101 and claim 2 under 35 U.S.C. § 102(a) in new grounds of rejection.

With respect to the affirmed rejection(s), 37 C.F.R. § 41.52(a)(1) provides that “Appellant may file a single request for rehearing within two months from the date of the original decision of the Board.”

In addition to affirming the Examiner’s rejection(s) of one or more claims, this decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides that “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.”

37 C.F.R. § 41.50(b) also provides that the Appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

Should the Appellant elect to prosecute further before the Examiner pursuant to 37 C.F.R. § 41.50(b)(1), in order to preserve the right to seek review under 35 U.S.C. §§ 141 or 145 with respect to the affirmed rejection, the effective date of the affirmation is deferred until conclusion of the prosecution before the Examiner unless, as a mere incident to the limited prosecution, the affirmed rejection is overcome.

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If the Appellant elects prosecution before the Examiner and this does not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejection, including any timely request for rehearing thereof.

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

AFFIRMED 37 C.F.R. § 41.50(b)

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