

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM C. MOYER

Appeal 2009-002154
Application 10/944,310
Technology Center 2100

Decided: January 20, 2010

Before JOSEPH L. DIXON, LANCE LEONARD BARRY, and
ST. JOHN COURTENAY III, *Administrative Patent Judges*.

DIXON, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellant appeals under 35 U.S.C. § 134(a) from a final rejection of claims 1-15. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

I. STATEMENT OF THE CASE

The Invention

The Appellant invented a method and system for forming an immediate value/operand by a processor that uses one field to determine the positional location of the portion of the immediate value within the immediate value and one field of fill bit to fill the remainder of the immediate value (Spec. 8-9).

The Illustrative Claim

Claim 1, an illustrative claim, reads as follows:

1. In a data processing system, a method of forming an immediate value comprising:

receiving a data processing instruction at an input of a processor;

the processor using a first field of the same data processing instruction as a portion of the immediate value;

the processor using a second field of the same data processing instruction to determine a positional location of the portion of the immediate value within the immediate value; and

the processor using a bit value in a third field of the same data processing instruction to determine a remainder of the immediate value.

The References

The Examiner relied upon the following prior art as evidence in support of rejections:

Kubota	US 6,308,258 B1	Oct. 23, 2001
Kyker	US 2003/0101209 A1	May. 29, 2003

The Rejections

The following rejections are before us for review:

Claims 1-5 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

Claims 1-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kubota and Kyker.

II. ISSUES

Has the Appellant shown that the Examiner erred in determining the method recited in claim 1 is not patent-eligible subject matter under 35 U.S.C § 101?

Has the Appellant shown that the Examiner erred in finding that the combination of Kubota and Kyker discloses “the processor using a second field of the same data processing instruction to determine a positional location of the portion of the immediate value within the immediate value,” as recited in the independent claim 1?

III. PRINCIPLES OF LAW

Prima Facie Case of Unpatentability

The allocation of burden requires that the United States Patent and Trademark Office (USPTO) produce the factual basis for its rejection of an

Appeal 2009-002154
Application 10/944,310

application under 35 U.S.C. §§ 102 and 103. *See In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984) (citing *In re Warner*, 379 F.2d 1011, 1016 (CCPA 1967)). Appellant has the opportunity on appeal to the Board of Patent Appeals and Interferences to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (citing *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

35 U.S.C. § 101

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

35 U.S.C. § 101.

The Court in [*Diamond v. Diehr*, 450 U.S. 175 (1981)] thus drew a distinction between those claims that “seek to pre-empt the use of” a fundamental principle, on the one hand, and claims that seek only to foreclose others from using a particular “application ” of that fundamental principle, on the other. Patents, by definition, grant the power to exclude others from practicing that which the patent claims. *Diehr* can be understood to suggest that whether a claim is drawn only to a fundamental principle is essentially an inquiry into the scope of that exclusion; i.e., whether the effect of allowing the claim would be to allow the patentee to pre-empt substantially all uses of that fundamental principle. If so, the claim is not drawn to patent-eligible subject matter.

In re Bilski, 545 F.3d 943, 953 (Fed. Cir. 2008) (internal citation omitted).

The Supreme Court . . . has enunciated a definitive test to determine whether a process claim is tailored narrowly enough to encompass only a particular application of a fundamental principle rather than to pre-empt the principle itself. A claimed process is surely patent-eligible under § 101 if: (1) it is tied to a

particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.

Id. at 954 (citation omitted).

The machine-or-transformation test is a two-branched inquiry; an applicant may show that a process claim satisfies § 101 either by showing that his claim is tied to a particular machine, or by showing that his claim transforms an article. Certain considerations are applicable to analysis under either branch First, . . . the use of a specific machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility. Second, the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity.

Id. at 961-62 (internal citations omitted).

Obviousness

The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; and (3) the level of skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966).

IV. FINDINGS OF FACT

1. Claim 1, illustrated supra, recites a process or method having a plurality of steps by utilizing a processor to form an immediate value/operand with 32 bit (Abstract; Spec. 8; Figs. 6-7). When the processor receives a data processing instruction, the processor (inherently under program control) determines a field of the instruction being a portion of the immediate value, a file of the instruction being a positional location of the

portion of the immediate value, and a field of the instruction being a fill bit of a remainder of the immediate value (Spec. 8-9).

2. Kubota discloses that a class field (212, 222, 262, or 292), which is used for specifying a group to which this instruction belongs, and usually an extension instruction (Kubota, col. 13, ll. 23-67; col. 15, ll. 34-56; col. 18, l. 20-col. 19, l. 49; Figs. 7A-13C).

3. Kubota also discloses a “d”-bit region 296 in a type-3 instruction. The d-bit calls a PC-relative subroutine for shifting the 8-bit immediate data (imm8) stored in the immediate data region 298 to one bit left to form a 9-bit immediate data (Kubota, col. 18, ll. 20-43; Figs. 12).

4. Kyker discloses the opcode used in the instruction for sign extension, sharing, back-scavenging, or forward-scavenging (Fig. 3, [0031]).

5. Kyker also discloses that the sign extension/compression field in the instruction can be used for compressing the immediate value/operand to certain bits while executing the instruction ([0034]-[0037], Figs. 4a-4b).

V. ANALYSIS

“[T]he examiner bears the initial burden on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability. If that burden is met, the burden of coming forward with evidence or argument shifts to the applicant.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

The Examiner set forth a detailed explanation of a *prima facie* case of unpatentability in the Examiner’s Answer. Therefore, we look to Appellant’s Briefs to show error in the proffered *prima facie* case.

35 U.S.C. § 101 rejection

With respect to claims 1-5, the Appellant contends that the claimed subject matter in the claims 1-5 is patentable subject matter under 35 U.S.C. § 101 because the rejected method claims 1-5 produce useful, concrete, and tangible results. (App. Br. 14.)

The Examiner maintains that claims 1-5 are “so broad as to cover any and all practical applications of any instruction with an immediate operand. The mere determining of a designated format of a value in an instruction . . . using bits from the instruction does not provide any specific application” (Ans. 9); and that the claims 1-5 show “a conversion of data such as immediate data to another form without any substantial practical application except in connection with a digital computer would preempt the algorithm and also for that reason is not statutory.” (Ans. 12.)

We note that both the Appeal Brief and the Answer were filed before *In re Bilski* was decided by the Court of Appeals for the Federal Circuit (“CAFC”). The CAFC held that “the machine-or-transformation test outlined by the Supreme Court is the proper test to apply.” *Bilski*, 545 F.3d at 960. “[A]n applicant may show that a process claim satisfies § 101 either by showing that his claim is tied to a particular machine, or by showing that his claim transforms an article” into a different state or thing. *Id.* at 961 (citation omitted); *see also Gottschalk v. Benson*, 409 U.S. 63, 70 (1972).

We start our analysis with the threshold question whether the claim 1 recites a process claim before applying the machine-or-transformation (M/T) test. We find that claim 1 recites a method for forming an immediate value through several steps conducted by a processor (FF 1), thus, it is self-evident

that claim 1 is directed to a process as set forth in 35 U.S.C. § 101, which can be properly analyzed by applying the M/T test.

We then apply the machine prong of the M/T test. We find that claim 1 recites a processor in each of the steps of the claimed process which imposed a meaningful limitation to the scope of claim 1 to process the received data processing instruction. Thus, we conclude that claim 1 is “tied to” a machine, i.e., a processor. We next decide whether the processor processes the data processing instruction claimed in claim 1 is a “particular machine” within the meaning of the M/T test.

Our reviewing court provided guidelines that can be appropriately applied to this case that “[w]e have held that such programming creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software.” *In re Alappat*, 33 F.3d 1526, 1549 (Fed. Cir. 1994) (citation omitted), *abrogated by Bilski*, 545 F.3d 943 (regarding the “useful, concrete, and tangible result” test originally set forth in *Alappat* at 1544).

Here, the processor recited in claim 1 is programmed to process data processing instructions in a particular way, i.e., forming an immediate value/operand of 32 bits with only one instruction (FF 1). Therefore, we conclude that the processor claimed in claim 1 is a “particular machine” within the meaning of the M/T test. Accordingly, we conclude that claim 1 satisfies the machine prong of the M/T test.¹

¹ We do not need to go through the transformation prong of the M/T test after the machine prong of M/T test is passed.

Furthermore, in *Benson*, the Court held that claims of a process/method involving a mathematical formula for converting binary-coded-decimal (BCD) numbers into pure binary numbers by utilizing a general computer were not patent-eligible under 35 U.S.C. § 101. The court stated:

What we come down to in a nutshell is the following.

It is conceded that one may not patent an idea. But in practical effect that would be the result if the formula for converting [binary code] to pure binary numerals were patented in this case. The mathematical formula involved here has no substantial practical application except in connection with a digital computer, which means that if the judgment below is affirmed, the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.

Benson, 409 U.S. at 71-72.

In contrast to *Benson*, the present claimed process of the instant invention for processing a data processing instruction by a processor is not an abstract idea because the claimed process has real world use (to form a 32 bit immediate value/operand with only one instruction) and is practical in the computer field. In addition, the claimed process is neither a mathematical formula nor a mathematical algorithm. The claimed process, if allowed, would not patent an abstract idea or pre-empt any other uses of the mathematical formula, but rather give a limited monopoly of the claimed process to the Appellant. Indeed, claim 1 as written is not “so abstract and sweeping” that it would “wholly pre-empt” the use of any apparatus employing the claimed process recited therein. *Benson*, 409 U.S. at 71-72. Rather, claim 1 is limited to the use of a particular claimed combination of

elements performing particular claimed data processing to form an immediate value/operand through a portion of the immediate value in processing a data processing instruction by a processor in a computer (FF 1).

For the foregoing reasons, we cannot sustain the rejection of claim 1 under 35 U.S.C. § 101.

35 U.S.C. § 103(a) Rejections

With respect to claims 1, 6, and 11, the Appellant contends that “[c]learly, the field 212, and other class fields, cited and relied by the Examiner as equivalent to the recited ‘second field’ does not ‘determine a positional location of the portion of the immediate value within the immediate value’” (App. Br. 15), and that “[t]he Kyker patent instruction formats also do not have the recited second field ‘of the same data processing instruction to determine a positional location of the portion of the immediate value within the immediate value.’” (App. Br. 16).

The Examiner maintains that the claim language would have been obvious over the combination of Kubota and Kyker because “the scope of the limitation concerning the second field merely provide that the second field is used to determine the positional location of the portion of the immediate value in the immediate value.” (Ans. 18). Additionally, the Examiner states:

Note that that without the ext instruction the data portion of an immediate data only comprises bits zero to five, but with the use of an ext instruction the expanded instruction comprises immediate data from bits zero to eighteen (e.g., see col. 15, lines 1-15). Therefore, the class field with or without another operation field is used to determine the positional location of data portion of an immediate value. As further showing that the

class field is used to determine a positional location of the immediate data is shown in figs. 13B where the immediate value is at a position not justified to right or left of the immediate value but determined by the operation of the ext instruction and the class or type of ext instruction. As understood the ext instructions are of various types for performing a specific extension needed for a subsequent target instruction.

(Ans. 17, emphasis added.)

As shown in the discussion of the Kubota and Kyker teaching above the portion of the immediate value is stored in different positions in the immediate value depending on the value of the class field in the ext instruction of Kubota and the Control field of Kyker. The inclusion of the control field of Kyker allows an instruction to be compressed into fewer bit by compressing the immediate data field with the format indicated by the control field so that when the instruction indicated by the opcode is executed the control field is used to expand the immediate data to perform the operation on expanded data. For immediate values that can be expressed in fewer than the number of bits of the immediate field, the control field indicates for an instruction, and is used to determine, which positions in the expanded version of the immediate value contain the portion of the immediate value and which are fill bits of the immediate value taught by Kyker (e.g., see paragraphs 0036-0037].

(*Id.* at 22, emphasis added.)

We disagree with the Examiner's reading of the references. We find Kubota teaches that the class field is used to specify what type of the instruction is, e.g., the class field 212 identifies that the instruction being executed is an extension instruction (FF 1). Thus, the class field used in Kubota is not used "to determine a positional location of the portion of the immediate value within the immediate value" as required in independent claims. We also find Kubota teaches that a d-bit region in the

instruction is used to shift a portion of the immediate value one bit left regardless of where the portion of the immediate value is (FF 2). We thus find that the d-bit is also not used “to determine a positional location of the portion of the immediate value within the immediate value” as required in independent claims.

We further find that Kyker is relied upon by the Examiner only for the extension of the immediate value (Ans. 5-6, FF 4). We also further find that the sign extension field in the instruction of Kyker is only used for either extending the portion of the immediate value/operand or compressing the portion of the immediate value/operand to certain bits, e.g. 16 bits (FF 5). Neither the extension nor the compression of the portion of the immediate value/operand is required to determine the positional location of the portion of the immediate value/operand (FF 5). The Examiner has not shown, and we do not readily find that the combination of Kubota and Kyker teaches or would have reasonably suggested the argued limitations. We, therefore, conclude the positions of the Examiner are untenable.

Because we agree with at least one of the Appellant’s contentions, we cannot sustain the obviousness rejection of claims 1, 6, and 11.

The rejection of dependent claims 2-5, 7-9, and 12-15 contains the same deficiencies. Accordingly, we cannot sustain the obviousness rejection of claims 1-15.

VI. CONCLUSION

We conclude that the Appellant has shown that the Examiner erred in determining the method recited in claim 1 is not patent-eligible subject matter under 35 U.S.C § 101.

Appeal 2009-002154
Application 10/944,310

We also conclude that the Appellant has shown that the Examiner erred in finding that the combination of Kubota and Kyker discloses “the processor using a second field of the same data processing instruction to determine a positional location of the portion of the immediate value within the immediate value,” as recited in the independent claim 1.

VII. DECISION

We reverse the Examiner’s § 101 rejection of claims 1-5 and we reverse the Examiner’s obviousness rejection of claims 1-15.

REVERSED

erc

PREESCALE SEMICONDUCTOR, INC.
LAW DEPARTMENT
7700 WEST PARMER LANE MD: TX 32/PL02
AUSTIN, TX 78729