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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MATTHIAS CWIK, MARKUS ROESSLE,
EWALD MAURITZ, and STEFAN TUMBACK¹

Appeal 2017-008095
Application 13/577,687
Technology Center 3700

Before BENJAMIN D. M. WOOD, NATHAN A. ENGELS, and
ERIC C. JESCHKE, *Administrative Patent Judges*.

WOOD, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ Appellants state that the real party in interest is Robert Bosch GmbH. App.
Br. 2.

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a rejection of claims 1 and 3–20. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

THE INVENTION

The claims are directed to a method for meshing a starting pinion with a toothed ring of an internal combustion engine. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A method for actuating a starter device (10), wherein the starter device (10) has a starting pinion (22) which is provided to be meshed with a toothed ring (25) of an internal combustion engine (210), wherein the internal combustion engine (210) has a drive shaft (222), the method comprising:

- a. detecting firstly a rotational speed (n , n_1 , n_2 , n_3) of the drive shaft (222),
- b. comparing the rotational speed (n , n_1 , n_2 , n_3) with a predefined rotational speed value (n_G), and
- c. pre-engaging the starting pinion (22) in the direction of the toothed ring (25) if the rotational speed (n , n_1 , n_2 , n_3) is lower than or equal to the predefined rotational speed value (n_G);

wherein the detected rotational speed (n , n_1 , n_2 , n_3) is a rotational speed (n , n_1 , n_2 , n_3) of the drive shaft (222) in a previously determined position with a specific angle (α_n , α_{OT} , α_{UT}).

REFERENCE

Couetoux WO 2009/083477 July 9, 2009

REJECTIONS

Claims 15 and 16 are rejected under 35 U.S.C. § 101 as directed to patent-ineligible subject matter.

Claims 15 and 16 are rejected under 35 U.S.C. § 112 (pre- AIA), second paragraph, as indefinite.

Claims 1 and 3–20 are rejected under pre-AIA 35 U.S.C. § 102(b) as anticipated by Couetoux.

ANALYSIS

Claims 15 and 16—Rejected as Directed to Ineligible Subject Matter

Principles of Law

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. But the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014). To determine whether a claim falls within a judicially recognized exception to patent eligibility under 35 U.S.C. § 101, we apply the two-step framework set forth in *Mayo Collaborative Servs. v. Prometheus Labs, Inc.*, 566 U.S. 66, 76–77 (2012), and reaffirmed in *Alice*. For the first step, we determine whether the claims at issue are directed to a patent-ineligible concept such as an abstract idea, law of nature, or natural phenomenon. *Alice*, 573 U.S. at 217 (citing *Mayo*, 566 U.S. at 78–79). If so, we advance to the second step where “we consider the elements of each claim both individually and ‘as an

ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application” of the otherwise patent-ineligible concept. *Id.* (quoting *Mayo*, 566 U.S. 78–79). The Court has described this second step “as a search for an inventive concept—i.e., an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” *Id.* at 217–18 (citing *Mayo*, 566 U.S. at 72–73) (internal quotation marks and alterations omitted).

The USPTO recently published revised guidance on the application of the first step of the *Alice* framework. See *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Patent Eligibility Guidance”).² Under that guidance, to determine whether a claim is “directed to” a judicial exception (abstract idea, law of nature, or natural phenomenon), we first look to: (1) whether the claim *recites* a judicial exception; and, if so, (2) whether the claim recites additional elements that *integrate* the judicial exception *into a practical application*. *Id.* at 50. Only if a claim recites a judicial exception *and* does not integrate that exception into a practical application, do we proceed to the second *Alice* step. *Id.*

The Patent Eligibility Guidance also clarifies what constitutes an “abstract idea:” a matter will be treated as an abstract idea if it falls within the following specific groupings:

(a) Mathematical concepts--mathematical relationships, mathematical formulas or equations, mathematical calculations;

² Available at <https://www.govinfo.gov/content/pkg/FR-2019-01-07/pdf/2018-28282.pdf>.

(b) Certain methods of organizing human activity--fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions); and

(c) Mental processes--concepts performed in the human mind (including an observation, evaluation, judgment, opinion).

Id. at 52. “Claims that do not recite [subject] matter that falls within these enumerated groupings of abstract ideas should not be treated as reciting abstract ideas,” except in rare circumstances. *Id.* at 53.

Even if the claims recite any one of these three groupings of abstract ideas, these claims are still not “directed to” a judicial exception (abstract idea)—and thus are patent-eligible—if “the claim as a whole integrates the recited judicial exception into a practical application of that exception.” *Id.* “Integration into a practical application” requires an additional element or a combination of additional elements in the claim to apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the exception. *Id.* at 54–55. For example, limitations that indicate “integration into a practical application” include:

1) Improvements to the functioning of a computer, or to any other technology or technical field;

2) Applying the judicial exception with, or by use of, a particular machine;

3) Effecting a transformation or reduction of a particular article to a different state or thing; and

4) Applying or using the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception.

Id. at 55 (citing MPEP §§ 2106.05(a)–(c), (e)).

Analysis

Claims 15 is drawn to a non-transitory computer readable medium having a computer program that can be executed by an automobile internal-combustion engine control unit to “carry out all the steps of the method as claimed in claim 1.” Similarly, claim 16 is drawn to an automobile internal-combustion engine control unit programmed to “carr[y] out the method as claimed in claim 1.”

For *Alice* step 1, the Examiner finds that claim 1 is directed to a judicial exception—specifically, “mathematical relationships”—because one of the steps of claim 1 requires comparing numerical data. Ans. 8. For step 2, the Examiner finds that claims 15 and 16 “amount to no more than taking the method of claim 1 and simply saying ‘apply it’ on a general purpose computer.” *Id.* at 9. The Examiner thus determines that claims 15 and 16 are not patent eligible.³ *Id.*

³ The Examiner reached a different conclusion for method claim 1. Although the Examiner considered claim 1 to be directed to the same abstract idea because of its data-comparison limitation, the Examiner determined that the step of “pre-engaging the starting pinion in the direction

Appellants disagree with this analysis. Appellants first argue that because the Examiner found claim 1 to be eligible, the apparatuses of claims 15 and 16, which perform claim 1, must also be patent eligible. Reply Br. 2. Appellants also argue that claims 15 and 16 “meet the machine or transformation test showing § 101 eligibility.” *Id.*

We have considered the positions of the Examiner and Appellants, and determine not to sustain this rejection. Although we generally agree with the Examiner that the step of comparing mathematical data represents an abstract idea, claims 15 and 16 integrate that step into a practical application: determining when to pre-engage the starting pinion of a starter motor in the direction of a toothed ring of an internal combustion engine. The claimed data comparison is thus limited to a particular operation performed by a particular component of a particular machine, and therefore the additional limitations of claim 1 “implement[] a judicial exception . . . in conjunction with a particular machine . . . that is integral to the claim.” *Patent Eligibility Guidance*, 55 (citing MPEP § 2106.05(b)). Although, as the Examiner notes, claims 15 and 16 do not require the performance of this operation per se, they do require devices that are programmed to enable the performance of the operation, and thus claims 15 and 16 are limited in scope to the performance of that operation. Because claims 15 and 16 recite a

of the toothed ring” amounts to “significantly more than the abstract idea of determining when to perform this step.” Ans. 8. But, according to the Examiner, “[t]he non-transitory computer readable medium of claim 15 and the controller of claim 16 would not be capable of performing the pre-engaging step of claim 1 . . . because these products do not include the pinion or toothed ring (or the appropriate sensors) involved in the transformative step of claim 1 that amounts to significantly more than the abstract idea.” *Id.* at 9.

judicial exception that is integrated into a practical application, the claims are not “directed to” the judicial exception and thus are patent eligible.

Claims 15 and 16—Rejected as Indefinite

The Examiner rejects claims 15 and 16 because “it is unclear which statutory class of invention Applicant is claiming.” Final Act. 3. According to the Examiner, “[c]laim 1 is a clear method claim, however claims 15 and 16 as amended are not clearly structural claims that depend from and include the method of claim 1, and therefore it is not clear when infringement occurs, when the method is carried out or when the system is created that allows the method to be performed.” *Id.* (citing MPEP § 2173.05(p)). Appellants respond that claims 15 and 16 “are structural claims,” and “the method steps of claim 1 are functional limitations of the structures claimed” in claims 15 and 16. App. Br. 5.

We determine not to sustain this rejection. The claims are drawn to programmable devices that are programmed in a specific way to perform a specific operation. The claims do not require the actual performance of the operation to be infringed, but only require the devices to be programmed such that they are capable of performing the operation. *See Intel Corp. v. U.S. Int’l Trade Comm’n*, 946 F.2d 821, 832 (Fed. Cir. 1991) (holding that claim drawn to device that is “programmable” to function in a particular mode is infringed by a product that is capable of operating in that mode; actual operation in that mode by the product is not required). Thus, we disagree with the Examiner that it is unclear to which statutory class claims 15 and 16 belong: they are product claims.

Claims 1 and 3–20—Rejected as Anticipated by Couetoux

Appellants treat claim 1 as representative of the claims subject to this rejection. App. Br. 6–8. We do likewise, and decide the appeal of this rejection on the basis of claim 1 alone. 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner finds that Couetoux discloses all of the limitations of claim 1 including “wherein the detected rotational speed . . . is a rotational speed of the drive shaft . . . in a previously determined position with a specific angle.” Final Act. 4 (citing Couetoux ¶¶ 27–48). The Examiner asserts that “the claims merely require detecting the rotational speed of the drive shaft in a previously determined position with a specific angle,” which “is precisely what Couetoux does.” Ans. 13. The Examiner further asserts:

Couetoux describes that the speed is determined from a commonly employed TDC sensor (paragraph 37). That sensor works by determining the speed at a specific angle (sixty pulses per crankshaft revolution, 360° per revolution, therefore a pulse every 6°). The speed is calculated based on inverting the time between pulses (since the previous pulse or tooth (or crankshaft position), [(]paragraph 38). Therefore the speed is calculated in a previously determined position with a specific angle as required by the claims. Nothing in Appellants claims prohibit using this process continuously.

Id.

Appellants counter that “Couetoux discloses detecting the rotational speed continuously at all angles of the drive shaft and generating an average speed,” whereas “[t]he claimed invention looks to determine the speed, not continuously, but at a specific angle . . . once per revolution.” Reply Br. 3.

We are not persuaded that the Examiner erred in finding that Couetoux anticipates claim 1. Appellants premise its argument on claim 1 requiring shaft speed to be calculated “at a specific angle” rather than every

6°, but Appellants do not explain why each 6° of crankshaft rotation is not a specific angle, as the Examiner finds. Similarly, Appellants do not identify where claim 1 requires speed to be determined only “once per revolution,” or where it precludes determining speed continuously. Nor is such a requirement evident. Therefore, we sustain the Examiner’s rejection of claims 1 and 3–20 as anticipated by Couetoux.

DECISION

For the above reasons, we affirm the Examiner’s rejection of claims 1 and 3–20 as anticipated by Couetoux, and reverse the Examiner’s rejections of claims 15 and 16 under 35 U.S.C. §§ 102 and 112, second paragraph.

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

AFFIRMED