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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PAUL J. HAYS and CRAIG B. McANALLY

Appeal 2018-004806
Application 13/814,563¹
Technology Center 2800

Before KAREN M. HASTINGS, JAMES C. HOUSEL, and
JEFFREY R. SNAY, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants seek our review under 35 U.S.C. § 134(a) from the
Examiner's decision rejecting claims 1–20.

We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM.

¹ Appellants identify the real party in interest as Micro Motion, Inc. (Appeal Br. 5).

Independent claim 1 below is illustrative of the subject matter on appeal:

1. A method for validating a sensor assembly of a meter by determining whether the sensor assembly is one of at least one valid sensor type, the method comprising steps of:
 - receiving with a meter electronics one or more sensor calibration values for the sensor assembly in communication with the meter electronics;
 - comparing the received sensor calibration values to one or more known sensor calibration values, each known sensor calibration value corresponding to one of the at least one valid sensor type; and
 - validating the sensor assembly if the one or more received sensor calibration values are within a predetermined tolerance of the one or more known sensor calibration values corresponding to one of the at least one valid sensor type.

The Examiner maintains the following rejections:²

- (a) claims 1–20 under 35 U.S.C. § 101 for lack of patent eligible subject matter;
- (b) claims 1, 4–10, and 12–20 on the ground of nonstatutory double patenting as being unpatentable over claims 1–5, 8–15, 20–25, 28, and 29 over US 7,523,639;
- (c) claims 1, 2, 4–10, and 12–20 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as unpatentable over Hays (US 2007/0193334 A1, published Aug. 23, 2007) (“Hays”); and

² We refer to the Specification, filed Feb. 6, 2013 (“Spec.”); the Final Office Action dated May 30, 2017 (“Final Act.”), the Appeal Brief filed Oct. 18, 2017 (“Appeal Br.”); the Examiner’s Answer mailed Feb. 6, 2018 (“Ans.”), and the Reply Brief filed Apr. 5, 2018 (“Reply Br.”).

(d) claims 3 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Hays in view of Bornemann et al. (US 6,539,313 B1, issued Mar. 25, 2003) (“Bornemann”).

ANALYSIS

§ 101 Rejection

The provisions of 35 U.S.C § 101 defining the subject matter eligible for patent protection have been held to contain an implicit exception for the following concepts: laws of nature, natural phenomena, and abstract ideas. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014). “We have described the concern that drives this exclusionary principle as one of pre-emption.” *Id.* (citing *Bilski v. Kappos*, 561 U.S. 593, 611–12 (2010) (“upholding the patent ‘would pre-empt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea’”)).

The first step in analyzing whether a claim is directed to patent-eligible subject matter is determining whether the claim is directed to one of the patent-ineligible concepts: laws of nature, natural phenomena, and abstract ideas. *Alice*, 134 S. Ct. at 2355 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012)). If the claim is directed to a patent-ineligible concept, the second step in the analysis is to determine whether additional elements of the claim, “both individually and ‘as an ordered combination,’” “‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 566 U.S. at 77, 79).

We treat claim 1 as illustrative of the issues on appeal for the § 101 rejection. With regard to step one, the Examiner finds the claimed invention

is directed to abstract ideas (Final Act. 10). Specifically, the Examiner finds the invention is directed to mental processes because the receipt of sensor calibration values, comparison of received sensor calibration values to known sensor calibration values, and validation of a sensor assembly if the received value is within a predetermined tolerance for a known calibration value, as recited in claim 1, can be carried out mentally (Ans. 4).

Appellants argue the Examiner has not made a prima facie case because the Examiner's citations to *Grams* and *Myriad* (Final Act. 11; Ans. 10–11) do not explain how those inventions correspond to Appellants' inventions (Appeal Br. 15–16; Reply Br. 2–3).

To study this issue, we turn to the claim recitations and analyze whether they are directed to mental processes. The recitation of “receiving with a meter electronics one or more sensor calibration values for the sensor assembly in communication with the meter electronics” can be performed by a person instead of meter electronics, such as by a user reading the calibration value for a sensor assembly from a source, such as a display or hardcopy listing the calibration value for a particular sensor. Similarly, the recitation of “comparing the received sensor calibration values to one or more known sensor calibration values, each known sensor calibration value corresponding to one of the at least one valid sensor type” is a step that can be performed by a person mentally comparing the read sensor calibration value to those in a list of calibration values for known sensors.

Comparisons to case law also supports the Examiner's determination. Despite differences in technology, the Examiner's citations to *Grams* and *Myriad* are appropriate to support the proposition that a mental process is a patent-ineligible concept. The Federal Circuit has held that if a method can

be performed by human thought alone, or by a human using pen and paper, it is merely an abstract idea and is not patent-eligible under § 101 (*CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) (“[A] method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101”)). *SmartGene, Inc. v. Advanced Biological Labs., SA*, 555 Fed. App’x 950 (Fed. Cir. 2014) also serves as an example of a claim that was directed to a mental process. In *SmartGene*, the Federal Circuit determined a claim was directed to a process that could be performed without a computer and did not include any steps beyond those that doctors routinely and consciously perform (*id.* at 955). The claim in *SmartGene* involved providing patient information to a computing device, which is similar to the “receiving” step of claim 1, and generating a ranked listing of available treatment regimens for the patient, which correlates with the “comparing” step of claim 1 and appears to correlate with the “validating” step as well (*id.* at 951–52).

To further analyze the limitation “validating the sensor assembly if the one or more received sensor calibration values are within a predetermined tolerance of the one or more known sensor calibration values corresponding to one of the at least one valid sensor type,” we turn to the Specification to determine the meaning of the terms “validating” and “valid sensor type.”

The Specification states validation of a sensor type occurs “by comparing one or more received calibration values to known calibration values” and states “[f]or example, the sensor may comprise an invalid sensor type if it is manufactured by a different company” (Spec. 3:27–31). The Specification further discloses “[a]ccording to an embodiment of the invention, if the meter electronics 20 determines the sensor is invalid, the

meter electronics 20 may be prevented from operating with the sensor 10” (*id.* at 12:3–5) and “[a]ccording to an embodiment of the invention, the meter electronics can utilize the reproduction capabilities of a particular manufacturer in order to exclude sensors as invalid with calibration values that exceed a predetermined tolerance from stored calibration values, and presumably are made from a different manufacturer” (*id.* at 12:20–23). However, the Specification also states “[t]he sensor validation system and method according to the present invention differs from the prior art in that the sensor calibration values are used not only to identify the sensor type, but to validate the sensor type as an acceptable sensor to be used with the meter electronics” (*id.* at 14:23–26).

In view of the above, although the Specification discloses examples and embodiments in which the validation step determines whether a sensor is made by a different company, which means a “valid sensor type” would be a manufacturer’s own sensors in such a situation, this is insufficient to demonstrate an intent to limit the validation step and “valid sensor type” to only the sensors of a particular manufacturer.³ As noted above, the Specification also describes validation as simply determining whether a sensor’s calibration data matches that of “known calibration values” (i.e., matching the calibration value to that of a known sensor) and that validation determines the sensor type “as an acceptable sensor to be used with the meter electronics.” Thus, the validation step of claim 1 includes simply determining a sensor is a known sensor that is acceptable for use with meter

³ In any event, even if the validation step were limited to determining if the sensor is one made by a particular manufacturer, such a step would still be a mental process because this can be done by a person.

electronics. Therefore, we agree that the step of “validation” is directed to a mental process, which is a patent-ineligible concept.

Because claim 1 is directed to abstract ideas, we analyze claim 1 under step two of *Alice* to determine if there are additional limitations that individually, or as an ordered combination, ensure the claim amounts to “significantly more” than the abstract idea. *Alice*, 134 S. Ct. at 2355 (citing *Mayo*, 566 U.S. at 72–73, 77–79).

The Examiner the finds the additional elements recited in claim 1 are generic and simply used to carry out the abstract ideas and, therefore, do not add significantly more (Final Act. 10–11; Ans. 4). Citing various cases for support, Appellants contend claim 1 is directed to a specific improvement in the technical field of meters by identifying counterfeit sensor assemblies, which addresses the problem of those sensor assemblies being used with a manufacturer’s meter electronics (Appeal Br. 9–14). Appellants assert the use of such “knock-off” sensor assemblies results in a meter not performing according to standards and this weakens the manufacturer’s brand name recognition (*id.*).

To address claim 1 under step two, we consider the claim that was analyzed in *Mayo*. In *Mayo*, the Supreme Court stated that a claim directed to a method of optimizing the therapeutic efficiency for a treatment of an immune-mediated gastrointestinal disorder, which included the steps of administering a type of drug to a subject and determining the level of a metabolite in the subject due to the administration of the drug, wherein a certain level indicated an increased amount of the drug was needed and a certain level indicated a decreased amount of the drug was needed, added nothing more to the laws of nature already present when the limitations were

considered separately and as an ordered combination. *Mayo*, 566 U.S. at 73–75, 79. The Supreme Court stated the problem another way; the claim simply told a doctor to measure a metabolite level and consider a resulting measurement in light of correlations between the metabolite and an administered drug, which would “tie up the doctor’s subsequent treatment decision whether that treatment does, or does not, change in light of the inference he has drawn using the correlations.” *Id.* at 86–87.

Here, claim 1 does not require any action beyond “validating” the sensor assembly based upon “comparing” its calibration value to those of valid sensor types. As discussed above, “validating” includes simply determining a sensor assembly is acceptable for use with meter electronics. Such an operation does not necessarily exclude the use of sensors made by various manufacturers, such as so-called “knock-off” sensors; no action is required even if the sensor calibration value for a sensor assembly does not match known sensor calibration values. Thus, claim 1 presents a similar problem as the claim in *Mayo* because claim 1 ties up any action or decision subsequent to the validation step, which can be simply determining whether a sensor is acceptable for use with meter electronics. As a result, claim 1 is not directed to the specific improvement that addresses a problem, as asserted by Appellants. Stated differently, claim 1 is not focused on a specific method that improves the relevant technology but instead merely invoke generic processes to carry out abstract ideas. The additional recitations of claim 1, when considered individually and as an ordered combination, do not add significantly more to the mental steps of receiving calibration values for a sensor assembly, comparing the values to those for valid sensor types, and validating the sensor assembly, as recited in claim 1.

Appellants further contend claim 1 is tied to or necessarily rooted in the technology of meters (Appeal Br. 14–15). This argument is also unpersuasive. The Supreme Court has stated the “prohibition against patenting abstract ideas ‘cannot be circumvented by attempting to limit the use of [the abstract idea] to a particular technological environment’” (*Bilski*, 561 U.S. at 610–611 (quoting *Diamond v. Diehr*, 450 U.S. 175, 191–92 (1981))). To the extent Appellants refer to the result in *DDR Holdings* (Appeal Br. 10), the argument is unpersuasive because, as discussed above, claim 1 is not particularly drawn to the problem and improvement asserted by Appellants. Nor does claim 1 result in an improvement to overcome a problem for computer networks, as in *DDR Holdings*.

Appellants also argue claim 1 is patent eligible because it does not preempt all possible methods of validating a sensor assembly, citing *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016) for support (Appeal Br. 10, 12). These arguments are also unpersuasive. When discussing exceptions to patent eligibility under § 101, the Supreme Court has stated “the concern that drives this exclusionary principle as one of pre-emption” (*Alice*, 134 S. Ct. at 2354). However, characterizing preemption as a driving concern for patent eligibility is not the same as characterizing preemption as the test for patent eligibility. As our reviewing court has explained, “[t]he Supreme Court has made clear that the principle of preemption is the basis for the judicial exceptions to patentability” and “[f]or this reason, questions on preemption are inherent in and resolved by the § 101 analysis” (*Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (citing *Alice*, 134 S. Ct. at 2354)). Thus, “[w]hile preemption may signal patent ineligible subject matter,

the absence of complete preemption does not demonstrate patent eligibility” (*id.*). Furthermore, in *McRO* the Federal Circuit stated one should look to whether the claims “focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery” (*McRO*, 837 F.3d at 1314). The Federal Circuit determined “the claims are limited to rules with specific characteristics” and “[t]he specific, claimed features of these rules allow for the improvement realized by the invention.” *Id.* at 1313–14. As discussed above, claim 1 invokes generic operations directed to mental processes and is not focused on the specific improvement to meter technology asserted by Appellants.

Appellants do not argue claims 2, 4–10, and 12–20 separately from claim 1 (Appeal Br. 9–16). Therefore, for these reasons and those set forth in the Examiner’s Answer, we sustain the Examiner’s § 101 rejection of claims 1, 2, 4–10, and 12–20.

Claim 3 depends from claim 1 and recites “further comprising a step of preventing the meter electronics of the meter in communication with the sensor assembly from operating with the sensor assembly if the sensor assembly is invalid.” Claim 11 is an apparatus claim that includes corresponding recitations. Unlike claims 2, 4–10, and 12–20, the recitations of claims 3 and 11 add significantly more to the abstract ideas described above by providing a specific improvement to a problem occurring for a technological process; preventing use of a sensor assembly if it is found invalid (e.g., is a “knock-off” sensor assembly or is otherwise not a known sensor that is acceptable for use with meter electronics) (*see* Appeal Br. 11–14). As stated by the Examiner, the “preventing” operation “is a real step

which is more than the abstract idea” (Final Act. 11). For these reasons, we do not sustain the Examiner’s § 101 rejection of claims 3 and 11.

We do not reach the same result for independent claim 17, which recites, among other things, “permitting the operation of the meter if the one or more received sensor calibration values are within a predetermined tolerance of the one or more known sensor calibration values.” This recitation does not prevent usage of a “knock-off” sensor assembly that could cause poor meter performance and detrimental effects for a company’s brand. The “permitting” recitation simply allows a sensor assembly found to be acceptable for use with meter electronics to be used for that purpose. Therefore, claim 17 is also is not focused on the improvement to meter technology asserted by Appellants.

Claims 2 and 10 recite invalidation of a sensor assembly when the sensor assembly’s calibration value does not fall within the tolerances for known sensor calibration values. In other words, claims 2 and 10 recite the negative outcome when determining whether a sensor assembly is a known sensor assembly acceptable for use with meter electronics while claim 1 recites the positive outcome (i.e., the calibration value for a sensor assembly matches that of a known sensor calibration value). Like claim 1, claims 2 and 10 are not focused on the Appellants’ asserted improvement because no action is required beyond determining a sensor assembly is not a “valid sensor type” and nothing is significantly added to the mental process of making this determination.

Double Patenting Rejection

Claims 1, 4–10, and 12–20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1–5, 8–15, 20–25, 28, and 29 over US 7,523,639.

As stated by the Examiner (Ans. 28), Appellants do not present arguments for this rejection. Therefore, we summarily affirm the Examiner’s non-statutory obviousness-type double patenting rejection of claims 1, 4–10, and 12–20.

§§ 102 / 103 Rejection

Claims 1, 2, 4–10, and 12–20 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as unpatentable over Hays.

Appellants present separate arguments for claims 1 and 9, claims 2 and 10, and claim 17 (Appeal Br. 17–27). Claims 4–8 and 12–16 depend from claims 1 and 9. Claims 18–20 depend from claim 17. Therefore, we address claims 1, 4–9, and 12–16 as a first group, claims 2 and 10 as a second group, and claims 17–20 as a third group. For purposes of appeal, we select claim 1 as representative of the issues for the first group, claim 2 as representative of the issues for the second group, and claim 17 as representative of the issues for the third group.

Claims 1, 4–9, and 12–16

Appellants’ principle arguments on appeal for claims 1 and 9 are that Hays discloses identifying a meter type based upon calibration values received, not validating a sensor assembly, as recited in claim 1 and it would not have been obvious to modify Hays to make the validation of claim 1

(Appeal Br. 17–21).

Appellants’ arguments are unpersuasive. The Examiner finds Hays discloses a method including receiving calibration values for a sensor assembly, comparing the received calibration values to one or more known calibration values, and validating the sensor assembly when the received calibration value is within a predetermined tolerance of one or more known sensor calibration values (Final Act. 14–15).

The disclosure of Hays supports the Examiner’s findings. Hays discloses a flow meter monitoring system including a processing system configured to receive meter calibration values and correlate the meter calibration values to known meter calibration values to determine a flow meter type (Hays ¶¶ 15, 30, 39, 42). As discussed above with regard to the § 101 rejection, the “validating” step of claim 1 encompasses determining whether a sensor assembly is acceptable for use with meter electronics. As recited in claim 1, this is accomplished by comparing the sensor assembly’s calibration value to known sensor calibration values. Thus, although Hays is concerned with determining a flow meter type based upon comparing a received calibration value for a sensor assembly and comparing the value to those for known meter calibration values to determine a type, such an operation is encompassed by the scope of claim 1.

Appellants further assert Hays does not disclose or suggest validating whether a sensor validation value is within a predetermined tolerance of one or more known sensor calibration values, as recited in claim 1, because Hays does not mention a predetermined tolerance for known sensor calibration values (Appeal Br. 19). This argument is also unpersuasive. The Examiner finds there would be a predetermined tolerance when making the

comparison disclosed by Hays (Ans. 13–14). In fact, Hays discloses tolerances for calibration values in Figure 2 (Hays ¶ 40), which depicts ranges for various calibration values. We note that Figure 2 of Hays is similar to Figure 3 of Appellants’ disclosure, which depicts exemplary tolerances for calibration values (Spec. 11:14–30). Appellants do not respond to the Examiner’s finding and explanation.

In view of the above, a preponderance of the evidence in the record supports the Examiner’s §§ 102/103 rejection of claim 1. We sustain the rejection of claim 9 for the same reasons discussed above.

Appellants do not argue claims 4–8 and 12–16 separately from claims 1 and 9 (Appeal Br. 27).

Claims 2 and 10

Claim 2 depends from claim 1 and recites “further comprising a step of invalidating the sensor assembly if the one or more received sensor calibration values exceed the known sensor calibration values by more than the predetermined tolerance.” Claim 10 depends from claim 9 and includes similar recitations.

The Examiner finds Hays discloses the invalidating step of claims 2 and 10 because Hays discloses informing a user if there is an error (Final Act. 20). Appellants assert the arguments discussed above for claims 1 and 9 and further contend Hays does not disclose the “invalidating” step because Hays only discloses a non-match when there is a user entry error (Appeal Br. 21–24).

Appellants’ arguments are unpersuasive. Hays’s disclosure supports the Examiner’s finding because Hays discloses its system “can inform a user of an entry error in the FCF or K1 values if the determined flow meter type

differs from an expected flow meter type” (Hays ¶ 46). In other words, Hays discloses the determination of a sensor assembly not matching an expected (i.e., known) type.

Claim 1 is directed to a positive result when determining whether a sensor assembly matches valid sensor types. Claims 2 and 10 are directed to the opposite outcome; when a match between a sensor assembly and valid sensor types is negative. Such an operation encompasses determining a sensor assembly differs from an expected type, as disclosed by Hays. As a result, a preponderance of the evidence in the record supports the Examiner’s rejection of claims 2 and 10.

Claims 17–20

Independent claim 17 recites, among other things, receiving one or more calibration values for a sensor assembly, retrieving one or more known sensor calibration values, comparing the received sensor calibration values with the known sensor calibration values, and “permitting the operation of the meter if the one or more received sensor calibration values are within a predetermined tolerance of the one or more known sensor calibration values.”

The Examiner finds Hays discloses the “permitting” step of claim 17 or it would have been obvious to perform such a step (Final Act. 19–20). Appellants contend Hays is silent with regard to the “permitting” step and only identifies a meter assembly without permitting its operation and such a step would not have been obvious over Hays (Appeal Br. 24–27).

We agree with the Examiner that Hays anticipates claim 17, including the “permitting” step. In assessing the propriety of an anticipation rejection, “it is proper to take into account not only specific teachings of the reference

but also the inferences which one skilled in the art would reasonably be expected to draw therefrom” (*In re Preda*, 401 F.2d 825, 826 (CCPA 1968)). Here, although Hays is silent with regard to the “permitting” step of claim 17, Hays’ disclosure infers that a sensor assembly matching that of a known type would be permitted for use. The disclosure of Hays provides no indication that a sensor assembly matching a known type would be prevented from use. Indeed, one could have inferred from Hays’s disclosure of an error message for an assembly that doesn’t match an expected type (Hays ¶ 46) that Hays’s system would permit the use of an expected type of assembly because Hays does not disclose any message or problem when a match with an expected assembly type is determined.

In view of the above, a preponderance of the evidence in the record supports the Examiner’s §§ 102/103 rejection of claim 17. Appellants do not argue claims 18–20 separately from claim 17 (Appeal Br. 27).

For the reasons discussed above and those set forth in the Examiner’s Answer, we sustain the Examiner’s §§ 102/103 rejection of claims 1, 2, 4–10, and 12–20.

§ 103 Rejection

Claims 3 and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hays in view of Bornemann.

Appellants do not argue claims 3 and 11 separately from claims 1 and 9 (Appeal Br. 28). As discussed above, Appellants’ arguments do not identify a reversible error in the rejection of claims 1 and 9. Therefore, we sustain the § 103(a) rejection of claims 3 and 11.

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DECISION

The Examiner's rejection of claims 1–20 is affirmed.

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

AFFIRMED