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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PETER S. KIM, ERIC D. AGDEPPA, DAVID L. RIBBLE,
DAN R. TALLENT, RICHARD J. SCHUMAN, WILLIAM B. BISHOP,
and KEITH A. HUSTER¹

Appeal 2018-007761
Application 14/178,366
Technology Center 3600

Before JON M. JURGOVAN, SHARON FENICK, and
RUSSELL E. CASS, *Administrative Patent Judges*.

CASS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner’s final rejection under 35 U.S.C. § 101 of claims 1–13, 16, and 19–23, which constitute all the claims pending in this Application. Appeal Br. 1.² Claims 14, 15, 17, and 18 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ Appellants list Hill-Rom Services, Inc. as the real party in interest. Appeal Brief filed April 2, 2018 (“Appeal Br.”) 2.

² Rather than repeat the Examiner’s positions and Appellants’ arguments in their entirety, we refer to the above mentioned Appeal Brief, as well as the following documents for their respective details: the Final Action mailed September 29, 2017 (“Final Act.”); the Examiner’s Answer mailed May 25, 2018 (“Ans.”); and the Reply Brief filed July 18, 2018 (“Reply Br.”).

BACKGROUND

The present invention relates to a system and method for associating patients with hospital beds in a healthcare facility. Spec. ¶ 2. In Appellants' proposed system, patient data is manually entered and encoded onto a wristband using a write device. *Id.* ¶ 26. In one embodiment, the wristband then sends a signal to a radio frequency (RF) reader on or nearby a hospital bed. *Id.* ¶ 28. Based on the signal from the wristband, circuitry in the hospital bed determines the patient's name and displays it on a screen associated with the bed. *Id.* ¶ 30. The bed circuitry then transmits data (including bed identification, patient identification, and a medical record number (MRN)) to a bed status computer, which may be part of a nurse call system. *Id.* ¶ 31. The bed status computer sends the MRN and room number from the bed status computer to an admitting, discharge and transfer (ADT) computer, which verifies the data and sends a message back to the bed circuitry indicating that the correct patient is in or near the bed. *Id.* ¶ 32. The bed circuitry then displays a message on the screen indicating that the patient ID has been verified. *Id.* ¶ 33. If the patient information from the bed circuitry does not match the patient information in the ADT system, the bed status computer discards the bed data associated with the non-matching patient, and sends a message back to the bed circuitry, which causes the bed's display screen to display a message indicating failure to verify the patient's identification. *Id.* ¶ 46.

Claim 1 is illustrative of the claims at issue:

1. A method comprising:

entering patient data manually at an admission,
discharge and transfer (ADT) computer,

encoding via a signal transmitted by a writer coupled to the ADT computer at least some of the patient data entered at the ADT computer into memory of a wristband to be worn by the patient,

receiving with a reader a wireless signal transmitted by the wristband, wherein the reader is located in a room assigned to the patient,

displaying a name of the patient on a display screen of a hospital bed in response to the reader receiving the wireless signal,

transmitting from circuitry of the hospital bed to at least one bed status computer that is remote from the hospital bed and remote from the ADT computer at least some information included in the wireless signal,

communicating messages between the bed status computer and an ADT server of an ADT system that includes the ADT computer to attempt to verify that the patient is in the room that has been assigned and to determine a verification failure if the at least some of the information indicates that the patient does not match the patient data of the ADT system, wherein verification and verification failure is determined without the need for any manual data entry at the hospital bed and without the need for any manual data entry at the bed status computer,

communicating a verification message or a verification failure message from the bed status computer to the circuitry of the hospital bed,

displaying a verification message on the display screen of the hospital bed if the patient is in the room that has been assigned and displaying a verification failure message if the patient is not verified, wherein the patient's name is displayed on the display screen of the hospital bed prior to determining patient verification and prior to determining patient verification failure, and

temporarily storing bed status data of the hospital bed at the bed status computer until the verification message or verification failure message is received by the bed status computer, wherein the bed status computer transmits the bed status data to an electronic medical records (EMR) computer if the verification message is received, wherein the bed status computer discards the bed status data if the verification failure message is received.

Appeal Br. 27–28 (Claims Appendix).

PRINCIPLES OF LAW

I. SECTION 101

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. However, 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. *E.g.*, *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court’s two-step framework, described in *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012), and *Alice*. *Alice*, 573 U.S. at 217–18 (citing *Mayo*, 566 U.S. at 75–77). In accordance with that framework, we first determine what concept the claim is “directed to.” *See Alice*, 573 U.S. at 219 (“On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk.”); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (“Claims 1 and 4 in petitioners’ application explain the basic concept of hedging, or protecting against risk.”).

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 183 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that “[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula.” *Diehr*, 450 U.S. at 176; *see also id.* at 191 (“We view respondents’ claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula.”). Having said that, the Supreme Court also indicated that a claim “seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment.” *Id.* (citing *Benson* and *Flook*); *see, e.g., id.* at 187 (“It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.”).

If the claim is “directed to” an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where “we must examine the elements of the claim to determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 573 U.S. at 221 (citation omitted). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Id.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). “[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention.” *Id.*

II. USPTO SECTION 101 GUIDANCE

The United States Patent and Trademark Office (“USPTO”) recently published revised guidance on the application of § 101. USPTO, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) (“2019 Guidance”). Under the 2019 Guidance, we first look to whether the claim recites the following:

- (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activities such as a fundamental economic practice, or mental processes); and
- (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP §§ 2106.05(a)–(c), (e)–(h)).

See 2019 Guidance, 84 Fed. Reg. at 52–55.

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

(3) adds a specific limitation beyond the judicial exception that is not “well-understood, routine, conventional” in the field (*see* MPEP § 2106.05(d)); or

(4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

See 2019 Guidance, 84 Fed. Reg. at 56.

ANALYSIS

I. THE SECTION 101 REJECTION

A. The Examiner’s Rejection and Appellants’ Contentions

In the Final Office Action, the Examiner determines that claim 1 recites an abstract idea including the steps of “entering patient data,” “encoding via a signal transmitted,” “receiving . . . a wireless signal,” “displaying a name of the patient . . .,” “verify[ing] that the patient is in the room,” “determin[ing] a verification failure,” “communicating a verification message,” “displaying a verification message,” and “temporarily storing bed status of the hospital.” Final Act. 3–4. “[T]he additional computer elements,” according to the Examiner, are “recited at a high level of generality” and merely “provide conventional computer functions that do not add meaningful limits to practicing the abstract idea.” *Id.* at 4. In particular, the Examiner determines that the claimed “computer,” “wristband,” “circuitry,” “hospital bed,” and “display screen” are “well-understood, routine and conventional activities previously known to the industry” and, thus, “do not amount to significantly more than the underlying abstract idea.” *Id.* at 4–5. And, the Examiner concludes, “[t]here is no indication

that the combination of elements improves the functioning of a computer or improves any other technology,” because their “collective functions merely provide conventional computer implementation.” *Id.* at 5–6.

Appellants argue that the Examiner oversimplifies claim 1 and ignores the fact that the claim

recites a set of specific structural elements including “an admission, discharge and transfer (ADT) computer,” “a writer coupled to the ADT computer,” “a wristband to be worn by the patient,” “a reader . . . located in a room assigned to the patient,” “a hospital bed,” which has “a display screen” and “circuitry,” “at least one bed status computer that is remote from the hospital bed and remote from the ADT computer,” and “an electronic medical records (EMR) computer.”

Appeal Br. 13. Appellants argue that these “multitude of particular structural elements . . . render claim 1 narrow and specific, not abstract,” and thus, the claim is not directed to an abstract idea. *Id.* Appellants further disagree with the Examiner’s argument that claim 1 is not directed to a technological improvement, arguing that claim 1 is “an improvement in the technology of patient-to-room assignment in a healthcare facility” that “requires less manual input by caregivers in various portions of a healthcare information technology system than has been previously known in the prior art.” *Id.* at 17.

B. Analysis under Step 2A, Prong 1, of the 2019 Guidance

Under Step 2A, Prong 1, of the 2019 Guidance, we first must determine whether any judicial exception to patent eligibility is recited in the claim. The 2019 Guidance identifies three judicially excepted groupings: (1) mathematical concepts, (2) certain methods of organizing human activity such as fundamental economic practices, and (3) mental processes. 2019 Guidance, 84 Fed. Reg. at 52–53. Based on existing Supreme Court and

Federal Circuit precedent, the 2019 Guidance has identified “methods of organizing human activity” that may constitute an abstract idea, including “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).” *See* 2019 Guidance, 84 F3d. Reg. at 52.

Here, claim 1 falls into the category of managing interactions between people, which is one of the categories of “organizing human activity” recognized by the 2019 Guidance. *See id.* at 52 n.13. Specifically, claim 1 recites managing interactions between hospital staff and patients to determine whether a patient is located in the correct bed. For example, claim 1 recites the steps of “entering patient data manually,” “encoding . . . at least some of the patient data entered” on “a wristband to be worn by the patient,” “displaying a name of the patient on a display screen of a hospital bed.” These are steps that can be performed by persons, such as hospital staff, to provide identification on a patient’s body and on a hospital bed. *See* Spec. ¶ 3 (describing the manual entry of information regarding patient-to-location, patient-to-equipment, and patient-to-bed associations in current healthcare communication systems). Such identifications are interactions between patients and hospital staff that qualify as an abstract idea.

Claim 1 further recites “transmitting from . . . the hospital bed” information about the patient to a location “that is remote from the hospital bed” and keeps track of bed status, “communicating messages between” the

bed status location and an “admission, discharge and transfer (ADT)” location “to attempt to verify that the patient is in the room that has been assigned,” at the ADT location. These are steps that can be performed via interactions (such as by telephone) between hospital personnel at multiple locations, such as a nurse at a patient’s bedside, a nurse at a call station who keeps track of bed status, and personnel at a central location in the hospital that handles patient admission, discharge, and transfer. *See* Spec. ¶ 4 (describing known nurse call systems with a communication link to hospital beds that receive bed status data and correlates it with patient information), ¶ 6 (describing systems where patient-to-location and/or patient-to-equipment associations can be communicated from one location to another location where the associations are manually verified).

Claim 1 additionally recites “determin[ing] a verification failure if the at least some of the information indicates that the patient does not match the patient data of the ADT system,” “communicating a verification message or a verification failure message” from the bed status location to the hospital bed. These also are steps that can be carried out by communications between hospital staff, by having a person at the central admitting, discharge, and transfer location check the patient’s bed status against the central system’s records, and communicating to staff at a nurse call station whether the records match up or not. *See* Spec. ¶ 6 (sending patient-to-location associations to another location where they can be manually verified).

Claim 1 further recites “displaying a verification message on the display screen of the hospital bed if the patient is in the room that has been assigned,” “displaying a verification failure message if the patient is not

verified,” having “the patient’s name [be] displayed on the display screen of the hospital bed prior to determining patient verification and prior to determining patient verification failure.” These limitations recite steps that can be performed by having a nurse at a patient’s bedside indicate whether the patient is in the correct bed, either by writing manually using a whiteboard or similar device or entering that information using a keyboard associated with a display screen.

Finally, claim 1 recites “temporarily storing bed status data of the hospital bed” at a bed status location “until the verification message or verification failure message is received,” “transmit[ing] the bed status data” to a location where medical records are stored if the verification message is received, and having the bed status location “discard[] the bed status data if the verification failure message is received.” These limitations recite steps that can be performed by communications between hospital personnel at a central admitting, discharge, and transfer location (who can manually check the patient’s records received from the nurse call station against those at the central ADT location) and personnel at a nurse call station (who can manually update patient and bed information if the records match and discard them if they don’t).

In summary, the claim limitations above all involve managing interactions that can be performed manually by hospital personnel and patients in order to keep track of patients and beds. They, therefore, qualify as methods of organizing human activity under the 2019 Guidance. For this reason, we are persuaded that claim 1 recites one or more abstract ideas.

C. Analysis under Step 2A, Prong 2, of the 2019 Guidance

Having determined that the claims recite a judicial exception, we next determine whether the claims recite “additional elements that integrate the [judicial] exception into a practical application.” *See* 2019 Guidance, 84 Fed. Reg. at 54; MPEP §§ 2106.05(a)–(c), (e)–(h). We agree with the Examiner that the present claims do not recite sufficient additional elements to integrate the judicial exception into a practical application. *See* Final Act. 4–6.

Appellants argue that claim 1 integrates the judicial exception into a practical application because it includes a “multitude of particular structural elements,” specifically

“an admission, discharge and transfer (ADT) computer,” “a writer coupled to the ADT computer,” “a wristband to be worn by the patient,” “a reader . . . located in a room assigned to the patient,” “a hospital bed,” which has “a display screen” and “circuitry,” “at least one bed status computer that is remote from the hospital bed and remote from the ADT computer,” and “an electronic medical records (EMR) computer.”

Appeal Br. 13. We do not find this argument persuasive. These structural elements are all generic components that are used to automate a manual process for keeping track of patients and beds, which would previously have been carried out by communications between hospital personnel. *See* Spec. ¶¶ 3–6. It is well settled that “mere automation of manual processes using generic computers does not constitute a patentable improvement in computer technology.” *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1055 (Fed. Cir. 2017).

In this regard, the present case is analogous to *Voter Verified, Inc. v. Election Systems & Software LLC*, 887 F.3d 1376 (Fed. Cir. 2018), which is

cited in the 2019 Guidance. *See* 2019 Guidance, 84 F3d. Reg. at 52 n.13. In *Voter Verified*, the claim at issue recited a computerized voting station that presented an election ballot to the voter, accepted input of votes from the voter, printed out the election ballot recording the vote, and recorded the votes in the computer. *Voter Verified*, 887 F.3d at 1385. The Federal Circuit explained that this claim merely automated abstract ideas, namely the “concept of voting, verifying the vote, and submitting the vote for tabulation,” which have traditionally been performed by humans for many years. *Id.* The Federal Circuit also found that the use of standard structural elements, such as “a standard personal computer,” “a visual display device,” “a keyboard,” “data storage devices,” a “scanner,” and “a laser printer” were “not sufficient to transform abstract claims into patent-eligible subject matter.” *Id.* at 1386. Similarly here, the structural elements in claim 1 such as a “writer,” a “wristband,” a “hospital bed,” a “display screen,” “circuitry,” and various general purpose computers (an ADT computer, bed status computer, and EMR computer) are all standard and generic, and do not transform the abstract ideas of the claim into a patent-eligible invention.

We also agree with the Examiner that Appellants have not established that the invention of claim 1 “improves the functioning of a computer or improves any other technology,” because the structural elements in claim 1 “merely provide conventional computer implementation.” Final Act. 5–6. We do not find persuasive Appellants’ argument that the claim 1 is patent-eligible because it is “an improvement in the technology of patient-to-room assignment in a healthcare facility” that “requires less manual input by caregivers in various portions of a healthcare information technology system than has been previously known in the prior art.” *Id.* at 17. As discussed

above, the “improvement in the technology of patient-to-room assignment in a healthcare facility” merely automates activities that can be performed by individual hospital personnel and patients using generic computer components and peripherals. Appellants have not established that the invention improves the functioning of the computer itself, as opposed to simply improving the efficiency of the process of managing patients and beds. Appellants also do not establish that there is any improvement to the design or operation of the other structural elements in claim 1, such as the wristband, hospital bed, writer, or display screen. Rather, these merely appear to be generic components used in the manner in which they were intended to function.

D. Analysis under Step 2B

Under Step 2B, we determine whether claim 1 includes additional elements individually or in combination that provide an inventive concept and, therefore, amount to significantly more than the exception itself. Here, Appellants have not established that claim 1 includes any such “inventive concept,” or that claim 1 adds any limitations beyond the judicial exception that are not “well-understood, routine, or conventional” in the field. *See* MPEP § 2106.05(d). Again, Appellants point to the structural elements of “writer,” a “wristband,” a “hospital bed,” a “display screen,” “circuitry,” and various general purpose computers (an ADT computer, bed status computer, and EMR computer). We agree with the Examiner, however, that these structural elements are all generic and qualify as well-understood, routine, or conventional, and Appellants have failed to provide sufficient evidence to the contrary. Thus, claim 1 simply appends well-understood, routine, and conventional components previously known to the industry, specified at a

high level of generality, to the judicial exception. *See* 2019 Guidance, 84 Fed. Reg. at 56.

Consequently, Appellants have not established that the Examiner erred in rejecting claim 1 as being directed to patent-ineligible subject matter. We likewise sustain this rejection, as well as the rejection of independent claims 9 and 16, which include similar limitations

E. Dependent Claims

The Examiner determines that dependent claims 2–8 and 10–13 are also patent ineligible “because the additional recited limitation(s) fail(s) to establish that the claim(s) is/are not directed to an abstract idea without significantly more,” and that these claims “fail to remedy the deficiencies of their parent claims.” Final Act. 6. Appellants argue that these claims “have not been properly analyzed by the [E]xaminer” and that the Examiner’s analysis is “terse and conclusory.” App. Br. 18–19 (emphasis omitted), 21–22. We find that, given the analysis set forth with respect to the independent claims, the Examiner has made out a prima facie case as to these dependent claims. Moreover, Appellants have failed to articulate any reason why the dependent claims recite additional elements that “integrate the [judicial] exception into a practical application,” under Step 2A, prong 2 of the 2019 Guidance, or “provide an inventive concept” under Step 2B. Therefore, Appellants have failed to establish that the additional limitations dependent claims render the claims patent eligible under 35 U.S.C. § 101. *See* 37 C.F.R. § 41.37(c)(1)(iv) (“A statement [that] merely points out what a claim recites will not be considered an argument for separate patentability of the claim.”). Consequently, we affirm the Examiner’s rejection of dependent claims 2–8 and 10–13.

DECISION

We affirm the Examiner's rejection of claims 1–13, 16, and 19–23 under 35 U.S.C. § 101 as directed to non-statutory subject matter. 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).

AFFIRMED