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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte *PAUL BURTON, ROBERT R. FRIEDLANDER, RICHARD HENNESSY, JAMES R. KRAEMER, and* STEPHEN R. ZANDER

Appeal 2018-002600
Application 12/907,346
Technology Center 3600

Before HUBERT C. LORIN, TARA L. HUTCHINGS, and AMEE A. SHAH, *Administrative Patent Judges.*

LORIN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1–7, 9, 12–14, and 16. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE and enter a NEW GROUND of rejection.

[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as International Business Machines Corporation. Appeal Br. 2.

CLAIMED SUBJECT MATTER

The claimed subject matter "relates to the use of computers in optimizing health care for specific populations and/or individuals" (Spec. para. 1). Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A computer implemented method of identifying a public health care issue for a specific population based on data from a confederated public health database, the computer implemented method comprising:
>
> a processor acquiring and verifying data to be stored in a medical database and a non-medical database, wherein the data is verified by conforming to security rules for acquiring the data;
>
> a processor creating a confederated public health database from multi-disciplinary databases, wherein the multi-disciplinary databases comprise both the medical database and the non-medical database, wherein the medical database is dedicated to storing data that directly describes a public health issue, wherein the non-medical database is dedicated to storing non-linear data that has no logical connection to data in the medical database and does not describe the public health issue, wherein the confederated public health database is specific for a health care issue for a specific population, wherein the confederated public health database provides a consolidated database whose data is accessed from the medical database and the non-medical database via an Internet, wherein the confederated public health database provides future access to the medical database and the non-medical database without use of the Internet to access the medical database and the non-medical database, and wherein data from the non-medical database describes a first country that is experiencing the public health issue;
>
> the processor predicting the health care issue for the specific population based on data trends found in data from the confederated public health database, wherein the trends describe both medical and non-medical trends for the specific population, and wherein there is not a direct correlation between the

predicted health care issue and the data in the medical database and the non-medical database;

the processor creating a public health care plan to address the health care issue;

the processor transmitting, via an information hub architecture, the public health care plan to a public health official, wherein the information hub architecture also performs taxonomy management, metadata management, data quality management, identity management and security, multi-tenant user management, infrastructure services management, and governance management needed to deliver the public health care plan to the public health official;

identifying, by the processor, non-medical data for a second country;

comparing, by the processor, the non-medical data for the first country to the non-medical data for the second country; and

in response to the processor determining that the non-medical data for the first country and the non-medical data for the second country are equal, the processor predicting that the public health issue will arise in the second country.

REJECTION

The following rejection is before us for review:

Claims 1–7, 9, 12–14, and 16 are rejected under 35 U.S.C. § 101 for claiming patent-ineligible subject matter.

OPINION

The rejection of claims 1–7, 9, 12–14, and 16 under 35 U.S.C. § 101 for claiming patent-ineligible subject matter.

Claims 1–7, 9, 12–14, and 16 are indefinite for the reasons discussed below. Accordingly, the rejection of claims 1–7, 9, 12–14, and 16 under 35 U.S.C. § 101 for claiming patent-ineligible subject matter must fall, *pro forma*, because it necessarily is based on speculative assumptions as to the meaning of the claims. *See In re Steele*, 305 F.2d 859, 862–63 (CCPA 1962).

We make the following observations to explain why we are raising a question of definiteness. We otherwise have no comment on the merits of the Examiner's position regarding the patent–eligibility of the claimed subject matter.

We cannot meaningfully review this rejection because, based on the present record, we have been unable to give the claim limitation "information hub architecture also performs taxonomy management, metadata management, data quality management, identity management and security, multi-tenant user management, infrastructure services management, and governance management needed to deliver the public health care plan to the public health official" (all the claims) a broadest reasonable construction in light of the Specification, as it would be interpreted by one of ordinary skill in the art.

Introduction

35 U.S.C. § 101 provides that "[w]hoever 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."

In that regard, claim 1 (reproduced above) covers a "process" and is thus statutory subject matter for which a patent may be obtained.[2] This cannot be disputed. The two other independent claims on appeal, claim 5 to "[a] computer program product" and claim 9 to "[a] computer system" are nominally directed to the "manufacture" and "apparatus" statutory categories of invention, respectively. This is also undisputed.

However, the § 101 provision "contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014); (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)).

In that regard, notwithstanding, independent claims 1, 5, and 9 are statutory subject matter (as are the claims depending from them), the Examiner has raised a question of patent-eligibility on the ground that they are directed to an abstract idea.

Alice identifies a two-step framework for determining whether claimed subject matter is directed to an abstract idea. *Alice*, 573 U.S. at 217.

Alice step one – the "directed to" inquiry

According to *Alice* step one, "[w]e must first determine whether the claims at issue are *directed to* a patent-ineligible concept." (*Id.* at 218 (emphasis added)).

[2] This corresponds to Step 1 of the 2019 Revised 101 Guidance which requires determining whether a "claim is to a statutory category." 2019 *Revised Patent Subject Matter Eligibility Guidance*, 84 F. Reg. 50, 53 (Jan. 7, 2019). *See also* sentence bridging pages 53 and 54 ("consider[] whether the claimed subject matter falls within the four statutory categories of patentable subject matter identified by 35 U.S.C. [§] 101 . . . .").

The Examiner determined that "[c]laims 1-7, 9, 12-14, and 16 are directed to the abstract idea of prediction [of] the healthcare issue to a specific population." Final Act. 4.

Appellant disagrees, arguing *inter alia* that

> as now found in the amended claims and supported by paragraph [0034] of the present [S]pecification as originally filed, the present invention includes the feature of "transmitting, via an information hub architecture, the public health care plan to a public health official, wherein the information hub architecture also performs taxonomy management, metadata management, data quality management, identity management and security, multi-tenant user management, infrastructure services management, and governance management needed to deliver the public health care plan to the public health official". That is, the information hub architecture (see element 302 in FIG. 3A of the present [S]pecification) provides a number of management and security functions that are performed prior to delivering the health care plan, thus providing a technological improvement over prior art delivery systems.

Appeal Br. 9. *See also id.* at 10, 13, 16, and 17 (arguing the same).

Accordingly, there is a dispute over what subject matter the claims are directed to. Are they directed to "prediction [of] the healthcare issue to a specific population" (Final Act. 4), or a technological improvement due to the inclusion of an "information hub architecture" (e.g., Appeal Br. 9)?

Claim Construction[3]

To make a determination as to whether the claims at issue are directed to a patent-ineligible concept (or not), in accordance with step one of the

[3] "[T]he important inquiry for a § 101 analysis is to look to the claim." *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336,

Alice framework, we need to first accurately articulate what it is that the claims are directed to. The Examiner and the Appellant have two different views on this. The correct view will be the one that aligns with the claims, properly construed. In that regard, we consider the claims as a whole[4] giving them the broadest reasonable construction[5] as one of ordinary skill in the art would have interpreted it in light of the Specification[6] at the time of filing.

All the claims call for an "information hub architecture." It is described in functional terms; that is, it "*also* performs taxonomy management, metadata management, data quality management, identity management and security, multi-tenant user management, infrastructure

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1345 (Fed. Cir. 2013). "In *Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can.*, 687 F.3d 1266, 1273 (Fed. Cir. 2012), the court observed that 'claim construction is not an inviolable prerequisite to a validity determination under § 101.' However, the threshold of § 101 must be crossed; an event often dependent on the scope and meaning of the claims." *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1347–48 (Fed. Cir. 2015).

[4] "In determining the eligibility of respondents' claimed process for patent protection under § 101, their claims must be considered as a whole." *Diamond v. Diehr*, 450 U.S. 175, 188 (1981).

[5] 2019 Revised 101 Guidance, page 52, footnote 14 ("If a claim, under its *broadest reasonable interpretation* . . . .") (Emphasis added.)

[6] "First, it is always important to look at the actual language of the claims. . . . Second, in considering the roles played by individual limitations, it is important to read the claims 'in light of the specification.'" *Smart Sys. Innovations, LLC v. Chicago Transit Authority*, 873 F.3d 1364, 1378 (Fed. Cir. 2017) (R. Linn, dissenting in part and concurring in part), citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016), among others.

services management, and governance management needed to deliver the public health care plan to the public health official." Claim 1 (emphasis added). The claims do not, however, define what the "information hub architecture" is.

Turning to the Specification, "information hub architecture" is described only in paragraphs 30 and 34 and there, only as an embodiment. The passages are reproduced below in their entirety.

> **[0030]** With reference now to **FIG. 3**, an information hub architecture **302** for use with one embodiment of the present disclosure is presented. The information hub architecture **302** provides governance, infrastructure service, multi-tenant support, identity management and security, data quality management, metadata management, and taxonomy support for the data utilized herein.
>
> **[0034]** The data from the data aggregation and storage **308** is sent to business access services **310**, which include logic (i.e., HCAP **148** shown in **FIG. 1**) to establish probabilities that certain regions/patients and/or a specific patient will experience a certain medical condition. This information is then sent on to an information delivery system **312** for delivery to information consultants **314**. Note further that the information hub architecture **302** also manages taxonomy, metadata management, data quality management, identity management and security, multi-tenant (user) management, infrastructure services, and governance needed to handle this data manipulation and suggestion delivery.

Figs. 3A and 3B are reproduced below:

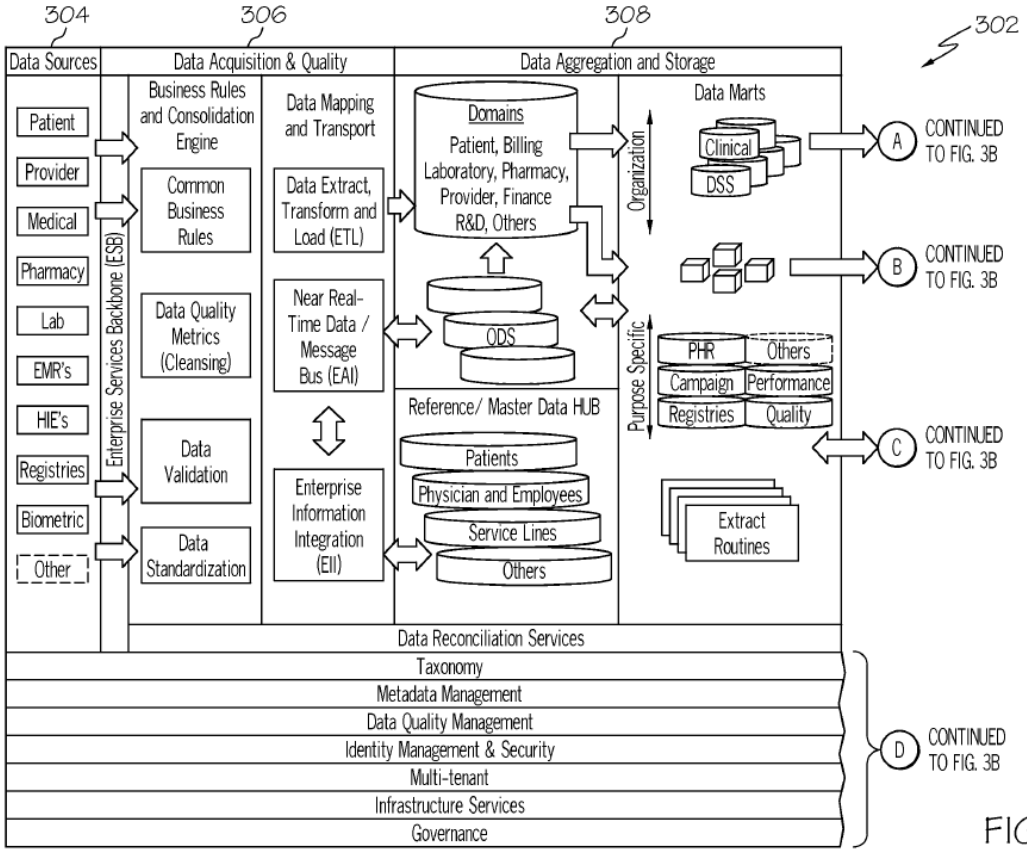
304
306
308
302
Data Sources
Data Acquisition & Quality
Data Aggregation and Storage
Patient
Provider
Medical
Pharmacy
Lab
EMR's
HIE's
Registries
Biometric
Other
Enterprise Services Backbone (ESB)
Business Rules and Consolidation Engine
Common Business Rules
Data Quality Metrics (Cleansing)
Data Validation
Data Standardization
Data Mapping and Transport
Data Extract, Transform and Load (ETL)
Near Real-Time Data / Message Bus (EAI)
Enterprise Information Integration (EII)
Domains
Patient, Billing Laboratory, Pharmacy, Provider, Finance R&D, Others
ODS
Reference/ Master Data HUB
Patients
Physician and Employees
Service Lines
Others
Organization
Purpose Specific
Data Marts
Clinical
DSS
PHR
Others
Campaign
Performance
Registries
Quality
Extract Routines
CONTINUED TO FIG. 3B
CONTINUED TO FIG. 3B
CONTINUED TO FIG. 3B
CONTINUED TO FIG. 3B
Data Reconciliation Services
Taxonomy
Metadata Management
Data Quality Management
Identity Management & Security
Multi-tenant
Infrastructure Services
Governance

FIG. 3A

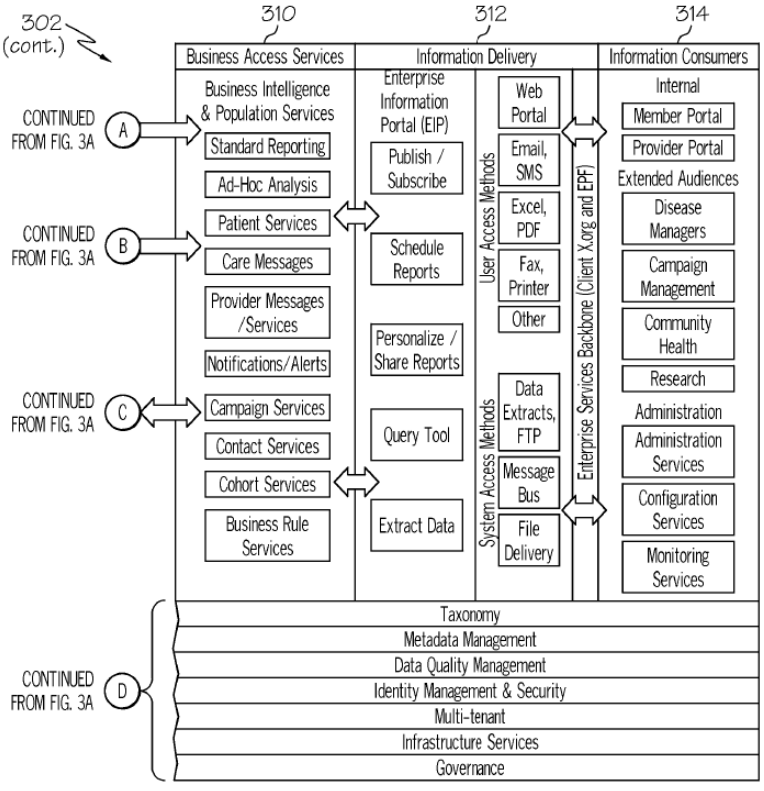
302 (cont.)
310
312
314
Business Access Services
Information Delivery
Information Consumers
CONTINUED FROM FIG. 3A
CONTINUED FROM FIG. 3A
CONTINUED FROM FIG. 3A
CONTINUED FROM FIG. 3A
Business Intelligence & Population Services
Standard Reporting
Ad-Hoc Analysis
Patient Services
Care Messages
Provider Messages /Services
Notifications/Alerts
Campaign Services
Contact Services
Cohort Services
Business Rule Services
Enterprise Information Portal (EIP)
Publish / Subscribe
Schedule Reports
Personalize / Share Reports
Query Tool
Extract Data
User Access Methods
System Access Methods
Web Portal
Email, SMS
Excel, PDF
Fax, Printer
Other
Data Extracts, FTP
Message Bus
File Delivery
Enterprise Services Backbone (Client X.org and EPF)
Internal
Member Portal
Provider Portal
Extended Audiences
Disease Managers
Campaign Management
Community Health
Research
Administration
Administration Services
Configuration Services
Monitoring Services
Taxonomy
Metadata Management
Data Quality Management
Identity Management & Security
Multi-tenant
Infrastructure Services
Governance

FIG. 3B

Figs. 3A and 3B depict an information hub architecture in accordance with an embodiment of the disclosure.

The passages and Figures add little to our understanding of what an "information hub architecture" is. As with the claims, these disclosures describe what the hub does, not what it is. We understand that the objective of the "information hub architecture" is to *also* acquire, store, manipulate, and deliver certain types of information. But what *is* the "information hub architecture"? Is it an overall conceptual design? Or is it a generic computer system? Is it a database or some other type of generic software? Or it something more than that?

At this juncture, given nothing more than what is recited in the claims and the cited passages and Figures from the Specification, we are unable to give the term "information hub architecture" an ordinary and customary meaning. There is insufficient information to ascertain what the "information hub architecture" of the claims is.

The disagreement between the Examiner and the Appellant as to what the "information hub architecture" is, mirrors our own difficulty.

The Examiner appears to view it as a "computer/server." *See* Ans. 4. Although, the Examiner recognizes that the "[S]pecification[] does not describe the components of the information hub." *Id.*

The Appellant argues, variously, that "the information hub architecture (see element 302 in FIG. 3A of the present [S]pecification) provides a number of management and security functions that are performed prior to delivering the health care plan, *thus providing a technological improvement over prior art delivery systems*." *E.g.*, Appeal Br. 9 (emphasis added). And yet the technology underlying the "information hub

architecture," which would help us understand the *technological* improvement over prior art delivery systems is never spelled out.

We agree that the Specification provides support for the suggestion that the "information hub architecture" is *essential* to practicing the claimed method. *See* para. 34 (emphasis added): "Note further that the information hub architecture **302** also manages taxonomy, metadata management, data quality management, identity management and security, multi-tenant (user) management, infrastructure services, and governance *needed to handle this data manipulation and suggestion delivery*." But given no further technical details about the "information hub architecture," we cannot determine whether said "information hub architecture" is a generic "computer/server," as the Examiner understands it to be, or a technological improvement over prior art delivery systems, as Appellant argues it is. Based on the present record, we are unable to resolve that dispute in any meaningful way.

The Abstract Idea[7]

Since we are unable to ascertain what the "information hub architecture" is, we are unable to give the claims a broadest reasonable construction (*see* above). Consequently, we cannot proceed to identify those

[7] *See* Step 2A of the 2019 Revised 101 Guidance. Step 2A determines "whether a claim is 'directed to' a judicial exception," such as an abstract idea. *Id.* at 53. Step 2A is a two prong inquiry.

limitations that recite an abstract idea.[8] Knowing what the "information hub architecture" consists of is crucial to determining whether the claimed subject matter is directed to an abstract idea; that is to say, whether the claimed subject matter falls within the enumerated groupings of abstract ideas; that is, "Mathematical concepts," "Certain methods of organizing human activity," and "Mental processes." [9]

As Appellant has extensively argued, it is true that specific asserted technological improvements, when claimed, can render claimed subject

[8] *See* Prong One (a) of Step 2A of the 2019 Revised 101 Guidance. "To determine whether a claim recites an abstract idea in Prong One, examiners are now to: (a) Identify the specific limitation(s) in the claim under examination (individually or in combination) that the examiner believes recites an abstract idea . . . ." *Id.* at 54.

[9] *See* Prong One ["Evaluate Whether the Claim Recites a Judicial Exception"] (b) of Step 2A of the 2019 Revised 101 Guidance. "To determine whether a claim recites an abstract idea in Prong One, examiners are now to . . . (b) determine whether the identified limitation(s) falls within the subject matter groupings of abstract ideas enumerated in Section 1 of the [2019 Revised 101 Guidance]." *Id.* at 54.

matter not directed to an abstract idea.[10] *Cf. McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1316 (Fed. Cir. 2016) ("When looked at as a whole, claim 1 is directed to a patentable, technological improvement over the existing, manual 3–D animation techniques."). In that regard, we can consider specific asserted technological improvements in the step one analysis of the *Alice* framework. This is consistent with the case law. *See Ancora Techns., Inc. v. HTC America, Inc.*, 908 F.3d 1343, 1347 (Fed. Cir. 2018) ("We have several times held claims to pass muster under *Alice* step one when sufficiently focused on such improvements.")

Nonetheless, as we have explained, without an understanding of what the "information hub architecture" is, we are unable to ascertain a broadest reasonable construction for the claims. That inability prevents us from accurately articulating what the claims are directed to and then reaching a determination as to whether what the claims are directed to is a patent-ineligible concept under step one of the *Alice* framework. We do not reach step two of the *Alice* framework.

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[10] *See* Prong Two ("**If the Claim Recites a Judicial Exception, Evaluate Whether the Judicial Exception Is Integrated Into a Practical Application**") of Step 2A of the 2019 Revised 101 Guidance. "A claim that integrates a judicial exception into a practical application will 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 judicial exception." 2019 Revised 101 Guidance 54. One consideration, implicated here, that is "indicative that an additional element (or combination of elements) may have integrated the exception into a practical application" (*id.*, at 55) is if "[a]n additional element reflects an improvement in the functioning of a computer, or an improvement to other technology or technical field" (*id.*).

For the foregoing reasons, we are not placed in a position to do a meaningful review of this rejection.

NEW GROUND OF REJECTION

Claims 1–7, 9, 12–14, and 16 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention.

For the reasons discussed, the claims and the Specification fail to inform those skilled in the art about the scope of the "information hub architecture" with any reasonable certainty. Appellant provides no definition for an "information hub architecture" either in the briefs or the Specification. "Information hub architecture" has no ordinary meaning, and its scope is unclear based on the intrinsic record. At most, the briefs and Specification describe the "information hub architecture" in terms of its additional functions – e.g., "manages taxonomy, metadata management, data quality management, identity management and security, multi-tenant (user) management, infrastructure services, and governance needed to handle this data manipulation and suggestion delivery." Para. 34. This is a result–oriented description that gives no insight into what the "information hub architecture" is. It insufficiently circumscribes the scope of the "information hub architecture." Appellant emphasizes that said "information hub architecture" "provid[es] a technological improvement over the prior art delivery systems" (Appeal Br. 10), which the Specification arguably supports (*see* para. 34). This suggests that there are technical details associated with the "information hub architecture" that exclude prior art delivery systems from its scope. However, because the present record

provides insufficient insight into what those technical details are, the claim phrase "information hub architecture" remains vague. "[U]nder the broadest reasonable interpretation when read in light of the Specification, [the phrase "information hub architecture"] is vague and unclear, and a person having ordinary skill in the art would not be able to discern the metes and bounds of the claimed invention in light of this claim language." *Ex parte McAward*, 2015–006416 (PTAB Aug. 25, 2017) (precedential). Accordingly, claims 1–7, 9, 12–14, and 16 are rejected under 35 U.S.C. § 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim Appellant's invention.

CONCLUSIONS

The decision of the Examiner to reject claims 1–7, 9, 12–14, and 16 under 35 U.S.C. § 101 for claiming patent-ineligible subject matter is reversed *pro forma*.

Claims 1–7, 9, 12–14, and 16 are newly rejected under 35 U.S.C. § 112, second paragraph.

In summary:

Claims Rejected	**35 U.S.C. §**	**Reference(s)/ Basis**	**Affirmed**	**Reversed**	**New Ground**
1–7, 9, 12–14, 16	101	Eligibility		1–7, 9, 12–14, 16	
1–7, 9, 12–14, 16	112 ¶ 2	Indefiniteness			1–7, 9, 12–14, 16
Overall Outcome				1–7, 9, 12–14, 16	1–7, 9, 12–14, 16

NEW GROUND

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 "[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 prosecution 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. . . .

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

REVERSED; 37 C.F.R. § 41.50(b)