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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JUN LIU, HUI XUE, MARCEL DOMINIK NICKEL, TI-CHIUN CHANG, MARIAPPAN S. NADAR, ALBAN LEFEBVRE, EDGAR MUELLER, QIU WANG, ZHILI YANG, NIRMAL JANARDHANAN, and MICHAEL ZENGE

Appeal 2018-002552
Application 14/038,958
Technology Center 2800

Before ADRIENE LEPIANE HANLON, CATHERINE Q. TIMM, and MERRELL C. CASHION, JR., *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

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[1] In explaining our Decision, we cite to the Specification of September 27, 2013 (Spec.), Final Office Action of February 3, 2017 (Final), Appeal Brief of August 7, 2017 (Appeal Br.), Examiner's Answer of November 8, 2017 (Ans.), and Reply Brief of January 8, 2018 (Reply Br.).

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellants[2] appeal from the Examiner's decision to reject claims 2–15. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

The claims are directed to a method for correcting for coil sensitivity differences in reconstructing a parallel magnetic resonance (MR) image (*see, e.g.*, claim 2) and a non-transitory program storage device that performs the method steps (*see, e.g.*, claim 9).

According to the Specification, the method estimates a coil sensitivity map (CSM) for 2-D MR images. Spec. 3. The method obtains coil sensitivity maps at a given spatial location by mathematically solving a generalized eigenvector system. *Id.* The mathematical method uses relationships between the generalized eigenvalue system and two related eigenvalue systems where the associated matrices are Hermitian. *Id.* The method computes a value $\mathbf{c}^r$ that optimizes the correlation between the left and right sides of equation $M^H\mathbf{c}^r = (S^r)^{\mathrm{H}}\mathbf{c}^r$ in an approach Appellants call MACO, which stands for maximal correlation. Spec. 19.

According to the Specification, the images reconstructed with the CSMs estimated by a MACO approach contain fewer artifacts due to a more accurate estimation of sensitivity maps. Spec. 29–30. Further, according to the Specification, "[e]mbodiments of the invention can reduce the

[2] Appellants are the applicants, Siemens Aktiengesellschaft of Munich, Germany and Siemens Corporation of Iselin, New Jersey, which, according to the Brief, are the real parties in interest. Application Data Sheet of September 27, 2013; Appeal Br. 1.

computational and storage costs and avoid the computation of large matrices by using equivalent representations." Spec. 3.

Claim 2 is illustrative of the method as set forth in the claims. We reproduce claim 2 with letters (a) through (e) to denote the steps of the method as follows:

> 2. A method for correcting for coil sensitivity differences in reconstructing a parallel magnetic resonance (MR) image, comprising the steps of:
>
> [(a)] constructing a matrix $A=\{\mathbf{a}_{ij}\}$ of real numbers from 3D sliding blocks of a 3D c_x x c_y x c_z image of coil calibration data acquired from a parallel magnetic resonance imaging apparatus,
>
> wherein c_x, c_y, and c_z are the x, y and z dimensions, respectively, of the coil calibration data, A has $[(c_x-k_x+1) \times (c_y-k_y+1) \times (c_z-k_z+1)]$ columns and $k_xk_yk_zn_c$ rows,
>
> wherein k_x, k_y, k_z are the x, y, and z dimensions, respectively, of the sliding blocks, n_c is a number of coils, i and j are row and column indices of elements $\mathbf{a}$ of matrix A, and $\mathbf{a}_{i,j}$ is a $k_xk_yk_z \times 1$ column vector that represents a jth sliding block of an ith coil;
>
> [(b)] calculating a left singular matrix $V_{\|}$ from a singular value decomposition of A,
>
> wherein $A = V\Sigma U^H$,
>
> wherein V is an $k_xk_yk_zn_c \times k_xk_yk_zn_c$ unitary matrix, Σ is a $k_xk_yk_zn_c \times [(c_x-k_x+1)(c_y-k_y+1)(c_z-k_z+1)]$ matrix with non-negative real numbers on the diagonal, and U is a $[(c_x-k_x+1)(c_y-k_y+1)(c_z-k_z+1)] \times [(c_x-k_x+1)(c_y-k_y+1)(c_z-k_z+1)]$ unitary matrix, and

$$V_{\parallel} = [\mathbf{v}_1, \mathbf{v}_2, \ldots, \mathbf{v}_\tau] = \begin{pmatrix} \mathbf{v}_{1,1} & \mathbf{v}_{1,2} & \cdots & \mathbf{v}_{1,\tau} \\ \mathbf{v}_{2,1} & \mathbf{v}_{2,2} & \cdots & \mathbf{v}_{2,\tau} \\ \cdots & \cdots & & \cdots \\ \mathbf{v}_{n_c,1} & \mathbf{v}_{n_c,2} & \cdots & \mathbf{v}_{n_c,\tau} \end{pmatrix}$$

is a matrix of left singular vectors of A corresponding to τ leading singular values wherein H denotes a complex-conjugate transpose, $\mathbf{v}_{i,k}$ is a $k_xk_yk_z$ x 1 column vector obtained by concatenating columns that is an i-th block in vector $\mathbf{v}_k$, wherein $\mathbf{v}_k$, k=1, 2, ... , τ, is a component of $V_{\parallel}$;

[(c)] calculating

$$P = V_{\parallel} V_{\parallel}^H = \left(\begin{pmatrix} \mathbf{p}_{1,1,1} & \mathbf{p}_{1,1,2} & \cdots & \mathbf{p}_{1,1,k_xk_yk_z} \\ \mathbf{p}_{1,2,1} & \mathbf{p}_{1,2,2} & \cdots & \mathbf{p}_{1,2,k_xk_yk_z} \\ \cdots & \cdots & \cdots & \cdots \\ \mathbf{p}_{1,n_c,1} & \mathbf{p}_{1,n_c,2} & \cdots & \mathbf{p}_{1,n_c,k_xk_yk_z} \end{pmatrix} \cdots \begin{pmatrix} \mathbf{p}_{n_c,1,1} & \cdots & \mathbf{p}_{n_c,1,k_xk_yk_z} \\ \mathbf{p}_{n_c,2,1} & \cdots & \mathbf{p}_{n_c,2,k_xk_yk_z} \\ \cdots & \cdots & \cdots \\ \mathbf{p}_{n_c,n_c,1} & \cdots & \mathbf{p}_{n_c,n_c,k_xk_yk_z} \end{pmatrix} \right)$$

wherein $\mathbf{p}_{i,j,t}$ is a $k_xk_yk_z$ x 1 column vector;

[(d)] calculating $\mathbf{s}_{i,j,t} = \mathbf{F}^H(\mathbf{P}_t(\mathbf{p}_{i,j,t}))$

wherein $\mathbf{F}^H$ represents an inverse Fourier transform and $\mathbf{P}_t$ represents a zero-padding operator; and

[(e)] solving $M^H \mathbf{c}^r = (S^r)^H \mathbf{c}^r$ for $\mathbf{c}^r$ from $\mathbf{c}^r = \underset{\alpha:\|\alpha\|_2=1}{\arg\max} \left\langle (S^r)^H \alpha, M^H \alpha \right\rangle$,

where $\mathbf{c}^r$ is a vector of coil sensitivity maps for all coils at spatial location r, α is an n_c x 1 column vector representing a generalized eigenvector, S^r is a vector of matrices of values $\mathbf{s}_{i,j,t}$ at a spatial location r in the image,

$$S^r = \left(\begin{pmatrix} s^r_{1,1,1} & s^r_{1,1,2} & \cdots & s^r_{1,1,k_xk_yk_z} \\ s^r_{1,2,1} & s^r_{1,2,2} & & s^r_{1,2,k_xk_yk_z} \\ \cdots & \cdots & \cdots & \cdots \\ s^r_{1,n_c,1} & s^r_{1,n_c,2} & \cdots & s^r_{1,n_c,k_xk_yk_z} \end{pmatrix} \cdots \begin{pmatrix} s^r_{n_c,1,1} & \cdots & s^r_{n_c,1,k_xk_yk_z} \\ s^r_{n_c,2,1} & \cdots & s^r_{n_c,2,k_xk_yk_z} \\ \cdots & \cdots & \cdots \\ s^r_{n_c,n_c,1} & \cdots & s^r_{n_c,n_c,k_xk_yk_z} \end{pmatrix} \right)$$

and

$$M = \left(\begin{pmatrix} 1 & 1 & \cdots & 1 \\ 0 & 0 & \cdots & 0 \\ \cdots & \cdots & & \cdots \\ 0 & 0 & \cdots & 0 \end{pmatrix} \begin{pmatrix} 0 & 0 & \cdots & 0 \\ 1 & 1 & \cdots & 1 \\ \cdots & \cdots & & \cdots \\ 0 & 0 & \cdots & 0 \end{pmatrix} \cdots \begin{pmatrix} 0 & 0 & \cdots & 0 \\ 0 & 0 & \cdots & 0 \\ \cdots & \cdots & & \cdots \\ 1 & 1 & \cdots & 1 \end{pmatrix} \right)$$

wherein the vector of coil sensitivity maps is used to correct sensitivity differences in coils used to generate said parallel MR image by finding a parallel MR image **m** that minimizes

$$\min_{\mathbf{m}} \frac{1}{2} \sum_{i=1}^{n_c} \left\| F_u (\mathbf{c}_i \otimes \mathbf{m}) - \mathbf{y}i \right\|_2^2 + \lambda \left\| W\mathbf{m} \right\|_1$$

wherein F_u is an under-sampling Fourier transformation operator, c_i denotes the coil sensitivity map for the i-th coil, $\mathbf{y}_i$ represents observed undersampled k-space data for the i-th coil, W is a redundant Haar wavelet transformation, and λ is a weighting factor.

Appeal Br. 16–17 (claims appendix) (formatting added).

The Examiner rejects claims 2–15 as lacking written descriptive support under 35 U.S.C. § 112(a) or § 112 ¶ 1, as indefinite under 35 U.S.C. § 112(b) or § 112 ¶ 2, and as directed to non-statutory subject matter under 35 U.S.C. §101.

OPINION

The Rejection for Lack of Written Descriptive Support

The Examiner rejects claims 2–15 under 35 U.S.C. § 112(a) or § 112 ¶ 1 because limitations found in claims 2 and 9 lack written descriptive support. According to the Examiner,

> the following limitations are not described in the original disclosure:
>
> - how matrices V, U, and Σ are acquired. Are the matrices predefined?
>
> - correcting for coil sensitivity differences.

Final 3.

Appellants contend that the Specification, as originally filed, provides support at pages 1, 2, and 28. Appeal Br. 6–8; Reply Br. 1–3.

The test for compliance with the written description requirement is "whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Ariad Pharmaceuticals, Inc. v. Eli Lilly & Co*., 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). "[T]he test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed." *Id*.

With regard to the first issue as to how matrices V, U, and Σ are acquired and whether they are predefined, the Examiner further explains that:

> Accordingly, Examiner maintains the position that recent amendments to the claims pertaining to matrices V, U and Σ including 'V is an kxkykznc X kxkykznc unitary matrix, Σ is a kxkykznc X [(cx-kx+1)(cy-kx+1)(cz-kz+1)] matrix with non-negative real numbers on the diagonal, and U is a [(cx-kx+ 1)(cy-ky+1)(cz-kz+1)] X [(cx-kz+1)(cy-kx+1)(cyky+1)] unitary matrix' are not supported by the original disclosure (see original specification, page 14, equation 8).

Ans. 2.

In response to the Examiner's further explanation, Appellants, in the Reply Brief, argue that the Examiner's Answer raised a new issue regarding definitions that was not raised in the Final Action. Reply Br. 1–2. We agree because the Examiner's initial finding did not point out the claim language at issue and put Appellants on notice of what was not supported. However, in the Answer, the Examiner more specifically points out the specific limitations the Examiner finds lack adequate support and cites to the Specification to show that it does not provide the necessary support.

The limitation at issue is "wherein V is an $k_xk_yk_zn_c$ x $k_xk_yk_zn_c$ unitary matrix, Σ is a $k_xk_yk_zn_c$ x $[(c_x\text{-}k_x\text{+}1)(c_y\text{-}k_y\text{+}1)(c_z\text{-}k_z\text{+}1)]$ matrix with non-negative real numbers on the diagonal, and U is a $[(c_x\text{-}k_x\text{+}1)(c_y\text{-}k_y\text{+}1)(c_z\text{-}k_z\text{+}1)]$ x $[(c_x\text{-}k_x\text{+}1)(c_y\text{-}k_y\text{+}1)(c_z\text{-}k_z\text{+}1)]$ unitary matrix." Claims 2 and 9.

Appellants contend that these definitions of V, Σ, and U^H follow from the definition of matrix A. Reply Br. 2. This appears to be an inherency position, i.e., because of the structure of matrix A, it follows that V, Σ, and U^H must have the structures recited in claims 2 and 9. Appellants do not point to any specific disclosure within the Specification discussing the structure or nature of the values of V, Σ, and U^H. Appeal Br. 6–8; Reply Br. 1–2.

Weighing the evidence, we find a preponderance supports the Examiner's finding of lack of written descriptive support. The Examiner cites to the Specification at page 14 and equation (8) as supporting the finding. Ans. 2. The portion of the original disclosure cited by the Examiner states "[l]et $A = V\Sigma U^H$ be the Singular Value Decomposition of A." Spec. 14. The Specification further discusses denoting $V_{||}$ as a matrix composed of the left singular vectors of A corresponding to the leading τ singular values, with A and $V_{||}$ sharing a similar structure. Spec. 14–15. However, this portion of the Specification fails to discuss the structure and values of V, Σ, and U^H.

Although Appellants state that the structures and values follow from the definition of matrix A, Appellants do not offer evidence or an adequate reasoned explanation supporting a finding of inherency. Thus, we cannot say that Appellants have identified a reversible error in the Examiner's finding of lack of written descriptive support.

Turning to the second issue, we determine this issue arises due to differences in language used in the claims as compared to the original written description of the Specification. The Specification does not use the words "correcting for coil sensitivity differences." Instead, the Specification describes "estimating coil sensitivity maps." *See, e.g.*, Spec. 1:18–19 ("This disclosure is directed to methods for estimating coil sensitivity maps (CSM) of magnetic resonance imaging (MRI) apparatuses.").

Appellants contend that portions of the disclosure at pages 1, 2, and 28 provide support for the "correcting for coil sensitivity differences" language. Appeal Br. 6–8; Reply Br. 2–3. We disagree. The portion of pages 1 and 2 discussed by Appellants is a discussion of the related art.

Spec. 1:21–2:13. It explains that coil sensitivity maps are used in parallel imaging, which uses multiple receiver coils to acquire the image in parallel. Spec. 1:21–22. Using parallel imaging can accelerate image acquisition. Spec. 1:22–2:1. It does so "by exploiting the spatially varying sensitivities of the multiple receiver coils since each coil image is weighted differently by the coil sensitivity maps (CSM)." *Id.* According to the Specification, the desire is to exploit the differences in sensitivities, not correct for them.

We agree with Appellants that the "purpose of the claimed invention is to obtain an accurate coil sensitivity map." Reply Br. 2. The evidence further supports Appellants' statement that "[t]he coil sensitivity map is, as its name implies, a map of the different sensitivities of MRI coils, such that image data obtained from such coils can be calibrated to obtain an accurate image." Reply Br. 2. According to the Specification, the map is used to reconstruct an image that is smoother and with fewer artifacts due to a more accurate estimation of the CSM. Spec. 29–30. Making a more accurate map of different coil sensitivities to obtain better images is not the same as "correcting for coil sensitivity differences." Creating an accurate map merely accurately identifies the differences; it does not *correct* for sensitivity differences. Appellants have not provided persuasive evidence that the method is "for correcting coil for sensitivity differences" as recited in claims 2 and 9.

The Rejection for Indefiniteness

The Examiner rejects claims 2–15 under 35 U.S.C. § 112(a) or § 112 ¶ 2 as indefinite based on limitations in claims 2 and 9, limitations in claims 4 and 11, and limitations in 5 and 12 that the Examiner determines are unclear. Final 3–4. Specifically, the Examiner determines these claims fail to define some recited equations, variables, and relationships. The Examiner also determines that some equations are redundant and others omit essential steps. Final 3–4.

We agree with Appellants that the Examiner reversibly erred. The legal standard for definiteness is whether a claim reasonably apprises those of skill in the art of its scope. *In re Warmerdam*, 33 F.3d 1354, 1361 (Fed. Cir. 1994). "[T]he definiteness of the language employed must be analyzed—not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art." *In re Moore*, 439 F.2d 1232, 1235 (CCPA 1971). The Examiner has not explained why the ordinary artisan would fail to understand the scope of the claims when they are read in light of the Specification.

Although the claims do not recite various aspects of the mathematical computation, pointing out those omissions is not enough to support an indefiniteness rejection. "[B]readth is not indefiniteness." *In re Gardner*, 427 F.2d 786, 788 (CCPA 1970).

The Rejection based on Non-Statutory Subject Matter

Turning to the rejection of claims 2–15 under 35 U.S.C. § 101, we note that Appellants focus their arguments on claims 2 and 9. Appeal Br.

10–14. Claim 2 recites a method and claim 9 recites a non-transitory program storage device that performs the method. The issues are the same for both claims. We select claim 2 as representative for resolving the issues on appeal.

35 U.S.C. § 101 states 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, subject to the conditions and requirements of this title." But even if at first blush a claim appears to be directed to one of the statutory classes of invention listed in § 101, it may not be eligible for a patent. "Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work." *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70–72 (2012) (quoting *Diamond v. Diehr,* 450 U.S. 175, 185 (1981) (quoting *Gottschalk v. Benson,* 409 U.S. 63, 67 (1972)). "And monopolization of those tools through the grant of a patent might tend to impede innovation more than it would tend to promote it." *Id.* The concern that drives this exclusionary principle is one of pre-emption. *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014). A claim that would wholly pre-empt others from making and using laws of nature, natural phenomena, and abstract ideas is not patentable. *Id.*

As stated in *Alice*:

> Accordingly, in applying the § 101 exception, we must distinguish between patents that claim the building blocks of human ingenuity and those that integrate the building blocks into something more, thereby transforming them into a patent-eligible invention. The former would risk disproportionately tying up the use of the underlying ideas and are therefore

> ineligible for patent protection. The latter pose no comparable risk of pre-emption, and therefore remain eligible for the monopoly granted under our patent laws.

Alice, 573 U.S. at 217 (internal quotations and citations to *Mayo* omitted). In *Alice*, the Court extended a framework that had been used in *Mayo* for distinguishing claims pre-empting laws of nature, natural phenomena, and abstract ideas from claims amounting to patent-eligible applications of those concepts. As stated in *Alice*:

> First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts. If so, we then ask, what else is there in the claims before us? To answer that question, 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. We have described step two of this analysis 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.

Alice, 573 U.S. at 217–18 (internal quotations and citations omitted).

There is no dispute that Appellants' claim 2 recites mathematical relationships. Appeal Br. 10. Appellants contend that they are not attempting to patent the mathematical concepts recited in the claim, but that the focus of the claim is on the improvement in computer-related technology for magnetic resonance imaging. Appeal Br. 13.

We disagree. As determined by the Examiner, the claim is directed to the mathematical algorithm itself without embodying something significantly more. Final 5–6; Ans. 10–12. We incorporate the Examiner's analysis and add the following primarily for emphasis to further explain.

In the framework of *Alice*, the first step is determining whether the claim is directed to a patent-ineligible concept. According to *Alice*,

> The "abstract ideas" category embodies "the longstanding rule that '[a]n idea of itself is not patentable.'" *Benson, supra,* at 67, 93 S.Ct. 253 (quoting *Rubber–Tip Pencil Co. v. Howard,* 20 Wall. 498, 507, 22 L.Ed. 410 (1874)); see also *Le Roy, supra,* at 175 ("A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right"). In *Benson,* for example, this Court rejected as ineligible patent claims involving an algorithm for converting binary-coded decimal numerals into pure binary form, holding that the claimed patent was "in practical effect . . . a patent on the algorithm itself." 409 U.S., at 71–72, 93 S.Ct. 253. And in *Parker v. Flook,* 437 U.S. 584, 594–595, 98 S.Ct. 2522, 57 L.Ed.2d 451 (1978), we held that a mathematical formula for computing "alarm limits" in a catalytic conversion process was also a patent-ineligible abstract idea.

Alice, 573 U.S. at 218. Like *Benson* and *Flook*, Appellants claimed method is directed to manipulating data using mathematical formulas. Claim 2 includes five steps, which we designate as steps (a)-(e). Step (a) is a step of constructing a matrix *A*, i.e., a step of organizing data. Steps (b)-(d) are steps of calculating using mathematical functions. Step (e) is a step of solving for variable $\mathbf{c}^r$ (vector of coil sensitivity maps for all coils at spatial location *r*). Steps (a)-(e) are steps of manipulating numbers using math to solve for $\mathbf{c}^r$.

Appellants contend that the claims are not directed to mathematical concepts because "[i]ndependent claims 2 and 9 recite the step of <u>using</u> the vector of coil sensitivity maps to correct sensitivity differences in coils used to generate said parallel MR image." Appeal Br. 10.

We do not agree that the language Appellants refer to transforms the nature of the claim into a patent-eligible application. The referenced language is found within step (e), the step of solving and reads: "the vector coil of coil sensitivity maps is used to correct sensitivity differences in coils used to generate said parallel MR image by finding a parallel MR image **m**." Claim 2. This claim recitation is merely stating an intended use for the data generated by the mathematical computations. The end product of the method is data. The claim is directed to manipulating data using a mathematical algorithm.

Because the claim is directed to the mathematical algorithm, we proceed to step two of the *Alice* framework. As stated in Alice

> At *Mayo* step two, 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. 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. *Mayo* made clear that transformation into a patent-eligible application requires more than simply stating the abstract idea while adding the words 'apply it.'"

Alice, 573 U.S. at 221 (quotations and citations omitted) (emphasis added).

Claim 2 does not include the necessary additional features amounting to an inventive concept sufficient to transform the claimed abstract idea into a patent-eligible application. Appellants' method, as pointed out by the Examiner, can be performed mentally or with pen and paper. Ans. 11. Nor does limiting the method to using the vector of coil sensitivity maps, i.e., the data generated, to correct sensitivity differences in coils used to generate the parallel MR image, amount to an inventive step. It is merely a statement of intended use for the data. As stated in *Alice*, "*Flook* stands for the proposition that the prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [the idea] to a particular technological environment." *Alice*, 573 U.S. at 222–23 (quoting *Bilski v. Kappos,* 561 U.S. 593, 610–611 (2010)). "If a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory." *Parker v. Flook,* 437 U.S. 584, 595 (1978) (internal quotations omitted).

Appellants have not identified a reversible error in the Examiner's determination that claims 2–15 do not meet the requirements of 35 U.S.C. § 101, but are instead directed to non-statutory subject matter without significantly more.

CONCLUSION

In summary:

Claims Rejected	**Basis**	**Affirmed**	**Reversed**
2–15	35 U.S.C. § 112(a) or § 112 ¶ 1	2–15	
2–15	35 U.S.C. § 112(b) or § 112 ¶ 2		2–15
2–15	§ 101	2–15	
Summary		2–15	

DECISION

The Examiner's decision is affirmed.

TIME PERIOD FOR RESPONSE

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