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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* TOM HOUSE

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Appeal 2017-009133<sup>1</sup>  
Application 13/840,455  
Technology Center 3700

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Before HUBERT C. LORIN, NINA L. MEDLOCK, and  
BRADLEY B. BAYAT, *Administrative Patent Judges*.

PER CURIAM.

DECISION ON APPEAL

STATEMENT OF THE CASE

Tom House (“Appellant”) appeals under 35 U.S.C. § 134(a) from the Examiner’s final rejection of claims 1–5.<sup>2</sup> We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM but denominate our affirmance as a NEW GROUND OF REJECTION.

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<sup>1</sup> Our Decision references Appellant’s Appeal Brief (“App. Br.,” filed Dec. 22, 2016), Reply Brief (“Reply Br.,” filed June 13, 2017), the Examiner’s Answer (“Ans.,” mailed Apr. 13, 2017), and the Final Office Action (“Final Act.,” mailed Dec. 22, 2015).

<sup>2</sup> Claims 6–19 are withdrawn. *See* App. Br. 28–29, Claims Appendix.

## THE INVENTION

According to the Specification, the invention relates to “training and evaluation programs” that “provide both strength and speed training, reducing the risk of injury while enhancing performance.” Spec. ¶ 78.

Claim 1, reproduced below with indentation added for clarity, is the sole independent claim, and representative of the subject matter on appeal.

1. A method of training, the method comprising:

performing a group of throws in a kneeling position,

wherein performing the group of throws comprises performing a set of throws for each of a plurality of balls with different weights,

wherein performing the set of throws comprises throwing a first throw modality and throwing a second throw modality, and

wherein the first throw modality comprises holding the ball throughout the throw and the second throw modality comprises releasing the ball during the throw,

wherein holding the ball throughout the throw comprises holding the ball until at least a deceleration of a forward motion of the ball, and

wherein releasing the ball during the throw comprises forward movement of the ball when the ball is not in contact with a person performing the method;

repeating the group of throws in a rocker position; and

repeating the group of throws in a run-and-gun position.

App. Br. 27, Claims Appendix.

## THE REJECTIONS

Claims 1–5 are rejected under 35 U.S.C. § 101 as being directed to judicially-excepted subject matter.

Claims 1–5 are rejected under 35 U.S.C. § 102(b) as anticipated by, or alternatively under 35 U.S.C. § 103(a) as obvious over “NPL<sup>3</sup> (baseball drills), [and/or] NPL<sup>4</sup> (Weighted ball for baseball drills),” and Corley (US 4,943,055, iss. July 24, 1990).

## ANALYSIS

*The rejection of claims 1–5 under 35 U.S.C. § 101 as being directed to judicially-excepted subject matter.*

Appellant argues claims 1–5 as a group. App. Br. 3–15; Reply Br. 2–12. We select independent claim 1 as representative for this group. Thus, claims 2–5 stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

### *Preliminary observation*

Although there is no requirement that a claim construction analysis precede a patentability determination (*see, e.g., Bancorp Servs., L.L.C. v. Sun life Assurance Co. of Can. (U.S.)*, 687 F.3d 1266, 1273 (Fed. Cir. 2012) (“[C]laim construction is not an inviolable prerequisite to a validity determination under § 101.”)), we find it necessary to do so here.

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<sup>3</sup> Dr. John Bagonzi, *The Effects of Graded Weighted Baseballs on the Velocity & Accuracy of a Thrown Baseball*, The Pitching Professor (hereinafter “NPL (baseball drills)”).

<sup>4</sup> Steven Ellis, *Baseball Pitching Mechanic* (hereinafter “NPL (Weighted ball for baseball drills)”).

At the beginning of the examination of this application, the Examiner characterized originally filed claims 1–5 as “drawn to a method of training a *baseball pitcher with specific instruction[s] for the pitcher to perform.*” Requirement for Restriction/Election, mailed Sept. 24, 2014, p. 2 (emphasis added). At that time, this characterization accurately reflected the language of independent claim 1.<sup>5</sup> Original claim 1 recited a method of training a *baseball pitcher* comprising three steps: “instructing the *pitcher* to perform a group of throws in a kneeling position”; “instructing the *pitcher* to repeat the group of throws in a rocker position; and instructing the *pitcher* to repeat the group of throws in a run-and-gun position.” Spec., p. 25 (emphasis added). Based on this language of the claim, the Examiner rejected claims 1–5 under 35 U.S.C. §§ 112, second paragraph, 101, and 102(b) or, in the alternative, 103(a). See Non-Final Office Action, mailed Mar. 18, 2015.

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<sup>5</sup> 1. A method of training a baseball pitcher, the method comprising:  
    instructing the pitcher to perform a group of throws in a kneeling position, wherein performing a group of throws comprises performing a set of throws for each of a plurality of balls with different weights, wherein performing a set of throws comprises throwing a first throw modality and throwing a second throw modality, and wherein the first throw modality comprises holding the ball throughout the throw and the second throwing modality comprising releasing the ball during the throw;  
    instructing the pitcher to repeat the group of throws in a rocker position; and  
    instructing the pitcher to repeat the group of throws in a run-and-gun position.  
Spec., p. 25.

Claims 1–5 were then amended to read as they now appear before us on appeal; notably, the terms “baseball pitcher” and “pitcher” were deleted from original claim 1. *See* Amendments to the Claims, filed Sept. 18, 2015, p. 3.<sup>6</sup>

Notwithstanding the amendment broadened the scope of original claim 1, Appellant argues against the rejections as if amended claim 1 still included the terms “baseball pitcher” and “pitcher.”

The Examiner provides no basis why she does not consider a transformation of a plurality of *baseballs* to be a transformation to another state. As noted, the state of each ball is changed during the throwing motion: starting from a state of rest, each ball gathers energy from the *pitcher's* arm and is then either released and thrown through the air (the release modality) or decelerates as it held during the deceleration of the *pitcher's* arm (the hold modality).

Amendment in Response to Non-Final Office Action under 37 C.F.R. § 1.111, p. 9 (emphasis added).

In the Final Office Action, the Examiner responds to Appellant's arguments with a similarly narrow view of claim 1's scope, which does not account for Appellant's amendment deleting the terms “baseball pitcher” and “pitcher” from the claim. *See* Final Act. 3–4, 6. For example, the Examiner states: “In this case, ‘the method for training a baseball pitcher’ is not considered to be tied to a particular machine.” *Id.* at 3.

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<sup>6</sup> The Appellant's explanation was that “[c]laims 1, 2, 4, and 5 are amended to clarify what one of skill in the art would understand by ‘holding the ball throughout the throw’ and ‘releasing the ball during the throw,’ to correct typographical errors, and to address ¶ 112 rejections.” Amendment in Response to Non-Final Office Action under 37 C.F.R. § 1.111, filed Sept. 18, 2015, p. 7.

In the subsequent Amendment After Final Action Under 37 C.F.R. § 1.116 (filed June 20, 2016), Appellant’s arguments rely on an even narrower construction of claim 1. For instance, Appellant argues that “‘holding the ball throughout the throw’ adds an unconventional step that *confines the claim to a particular useful exemplary application, namely training a pitcher’s arm to be stronger, healthier, and to throw faster.*” *Id.* at 11 (emphasis added).

Baseball is a multi-billion dollar sport with elaborate training programs for youths and professionals alike; however, this two throw modality was never a part of any routine pitching program prior to invention by the Applicant.

*Id.*

Appellant’s Appeal and Reply Briefs go even further in narrowly and improperly construing claim 1. *See, e.g.*, App. Br. 24 (“Applicant has changed baseball.”); *id.* at 23–26 (discussing the Examiner’s alleged failure to consider the Appellant’s evidence of secondary considerations as to alleged physical improvements to baseball pitchers). *See also* Reply Br. 5 (“The transformation of a pitcher’s arm alone is sufficient regardless of whether any machine is involved in the process.”). The Examiner’s Answer nowhere clarifies that independent claim 1 is broader than argued and that Appellant’s arguments do not correspond with the scope of the claim; rather, the Examiner maintains the narrow view presented in the Final Office Action. *See, e.g.*, Ans. 3–4 (“With regards to appellant’s assertion that the claimed steps are not a mental process -- it is well established in the exercise and sports art such as baseball, the trainee/user may carry out the act of pitching or batting without actually throwing or hitting a ball.”).

Neither the Appellant nor the Examiner has focused on the language of the claim. From the outset, positions have been taken that are not commensurate in scope with what is claimed. The competing positions we are now tasked to review are rooted in a construction of claim 1 that the language of the claim does not possess.

*Claim construction*

“The § 101 inquiry *must* focus on the language of the Asserted Claims themselves.” *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1149 (Fed. Cir. 2016) (emphasis added). *See Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013) (admonishing that “the important inquiry for a § 101 analysis is to look to the claim”); *see also Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343, 1346 (Fed. Cir. 2014) (“We focus here on whether the claims of the asserted patents fall within the excluded category of abstract ideas.”).<sup>7</sup>

Claim 1 recites a “method of training” comprising performing a group of throws in each of three positions, the group of throws “compris[ing] performing a set of throws for each of a plurality of balls with different weights.” App. Br. 27, Claims Appendix.

Although the claim calls for the use of “a plurality of balls with different weights,” the Specification describes the invention in broader

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<sup>7</sup> *See also* Giles S. Rich, *The Extent of the Protection and Interpretation of Claims-American Perspectives*, 21 INT’L REV. INDUS. PROP. & COPYRIGHT L. 497, 499 (1990) (“To coin a phrase, the name of the game is the claim.”).

terms; that is, the training method may be performed using other objects.

The Specification, for example, provides:

- Figure 2 (performing group of exercises using “First Object,” “Second Object,” “Third Object”);
- Spec. ¶ 26 (“performing a set of exercises for each of a first object, a second object, and a third object, wherein the first, second, and third objects have different weights”);
- ¶ 39 (“the first object, second object, and third object of the twentieth example are respectively a first elongated object, a second elongated object, and a third elongated object”);
- ¶ 40 (“the first, second, and third elongated objects of the thirty-third example are baseball bats”);
- ¶ 41 (“the first, second, and third elongated objects of the thirty third example are golf clubs”);
- ¶ 81 (“training program may include performing a set of exercises in a first modality and a second modality using objects of different weights”);
- ¶ 84 (“Objects of different weights may be used to train further the accelerators and decelerators.”);
- ¶ 85 (“In a baseball bat swing example, the training may incorporate a 28 oz, a 34 oz, or a 40 oz bat.”);
- ¶ 100 (“three golf clubs could be used . . . a driver shaft for light, a five iron for medium, and a sand wedge for heavy”); and
- ¶ 103 (Besides “baseball and golf, the training methods described herein could be used in any rotational sport, including, but not limited to, softball, cricket, basketball, American football, javelin, shot put,

discus, soccer, water polo, Olympic handball, tennis, badminton, lacrosse, volley ball, bowling, field hockey, and ice hockey.”). Accordingly, claim 1 defines a “method of training” comprising performing a group of throws in each of three positions, the group of throws “compris[ing] performing a set of throws for each of a plurality of balls with different weights.” More generally, the claimed method is performed via a “plurality of [objects] with different weights” which can be represented as X and Y.

For the “set of throws,” claim 1 calls for two steps: (1) “throwing a first throw modality” and (2) “throwing a second throw modality,” which are further defined:

- (1) “the first throw modality comprises holding the ball throughout the throw . . . compris[ing] holding the ball until at least a deceleration of a forward motion of the ball”; and,
- (2) “the second throw modality comprises releasing the ball during the throw . . . compris[ing] forward movement of the ball when the ball is not in contact with a person performing the method.”

Put more simply, the “set of throws” comprises (1) holding an object throughout a throw until at least a deceleration of a forward motion of the object, and (2) releasing the object during the throw when it is not in contact with a person performing the method.

These two throwing steps are performed for each of objects X and Y and in each of a (A) kneeling, (B) rocker, and (C) run-and-gun position.

Claim 1, thus, broadly covers a training method comprising performing steps (1) and (2) for each of objects X and Y in in each of positions (A), (B) and (C); where,

(1) = holding an object throughout a throw until at least a deceleration of a forward motion of the object;

(2) = releasing the object during the throw when it is not in contact with a person performing the method;

X = an object at a first weight;

Y = an object at a second weight;

(A) = a kneeling position;

(B) = a rocker position; and,

(C) = a run-and-gun position.

*Claim breadth*

The sheer breadth of claim 1 is self-evident.

For starters, claim 1 does not specify who or what performs steps (1) and (2) with objects X and Y at positions (A), (B), and (C). Claim 1 reasonably broadly covers any person(s), device(s), or combination(s) thereof, capable of performing the method, as claimed. The method, as claimed, could, for example, be performed by a robot. Even if we assume claim 1 is intended to be limited to persons capable of performing the steps, claim 1 does not require a single person to perform all the steps. Each step could, for example, be performed by a different person.

Claim 1 covers any reasonable way of performing steps (1) and (2). In that regard, arm-movement is not necessarily required. Steps (1) and (2) could be accomplished using one's wrists alone. A person's hands need not touch the objects. A racquet or a pitching machine could be used to perform or assist in performing steps (1) and (2). Furthermore, the objects could be thrown underhanded, and claim 1 puts no limit on the force to be applied or

the orientation of the objects' travel once thrown. The objects could move in a curve or end-over-end as in a juggling action.

Furthermore, steps (1) and (2) could be accomplished using the same movement. For example, moving one's wrist forward while holding the object, stopping the forward movement, and then releasing the object so as to drop it forward satisfies steps (1) and (2).

As for objects X and Y, claim 1 puts no limit on their size, shape, or material. Even when limited to balls, as long as X and Y have different weights, any ball is within the scope of the claim. Thus, the claim covers, for example, a ping pong ball for X and a beach ball for Y.

Claim 1 puts no limit on the order with which the three positions (A), (B), and (C) and the two throwing steps (1) and (2) must be performed. For example, the two steps performed in the kneeling position could be performed simultaneously while the others could be performed in succession.

Claim 1 puts no time limit on completing the "training" method. It could be performed over succeeding days, weeks, or years. One step could be performed one day and another performed another day.

Claim 1 puts no limit on where or when to perform the method.

Claim 1 does not specify how holding the ball is performed. It could include holding a football by the laces or holding a bowling ball using the finger holes.

These are but a few of the many variables the claimed "method of training" does not specify. Claim 1 covers repeating two particular movements with two different objects in three different positions by anyone or anything under any condition. In effect, claim 1 covers every practical

application of steps (1) and (2) with objects X and Y at positions (A), (B), and (C).

Claims 2–5 are also exceedingly broad in scope.

Having determined the broadest reasonable construction of claim 1 is a training method performed by steps (1) and (2) for each of objects X and Y in each of positions (A), (B), and (C), we now turn to the Examiner’s rejection.

*Comment on the Examiner’s Bilski-based analysis*

The Non-Final and the Final Office Actions were mailed on March 18, 2015 and December 22, 2015, respectively, well after the date of decision in *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014), i.e., June 19, 2014. However, neither § 101 rejection raised in these Office Actions mentions *Alice*. Instead, the rejections rely on the “machine-or-transformation test” articulated in *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (en banc). The Examiner does state that

the Supreme Court stated in *Bilski* [*Bilski v. Kappos*, 130 S. Ct. 3218 (2010)] that the “**machine-or-transformation test**” is a “useful and important clue” and “investigative tool” for determining whether some claimed methods are statutory processes, but it “is not the sole test for deciding whether an invention is a patent-eligible ‘process.’”

Final Act. 3. But that is precisely how the Examiner applies the “machine-or-transformation test,” i.e., as the sole test and not simply a clue. No other factor is discussed in the rejection. *Cf. Interim Guidance for Determining Subject Matter Eligibility for Process Claims in View of Bilski v. Kappos*, Memorandum to Patent Examining Corps, Robert W. Bahr, Acting Associate Commissioner For Patent Examination Policy, July 27, 2010.

Since June 25, 2014, examiners have been tasked to follow the two-step framework identified in *Alice* for determining whether claimed subject matter is judicially-excepted from patent-eligibility under 35 U.S.C. § 101. See *Preliminary Examination Instructions in view of the Supreme Court Decision in Alice Corporation Pty. Ltd. v. CLS Bank International, et al.*, Memorandum to Patent Examining Corps, Andrew H. Hirshfeld, Deputy Commissioner For Patent Examination Policy, June 25, 2014; MPEP 2106 (Rev. Aug. 2017). Only in the Response to Arguments section of the Examiner’s Answer (mailed April 13, 2017) does the Examiner follow, belatedly, the *Alice* two-step framework.

*Application of the Alice framework*

*Alice* identifies a two-step framework for determining whether claimed subject matter is judicially excepted from patent eligibility under 35 U.S.C. § 101.

According to step one of the *Alice* framework, “[w]e must first determine whether the claims at issue are directed to a patent-ineligible concept,” such as an abstract idea. *Alice*, 134 S. Ct. at 2355.

Under step one, the Examiner determined that the claims are directed to (a) “a method of training” (Final Act. 2), (b) a “method for training a baseball pitcher [which] falls under ‘a general concept’ i.e. a teaching concept which requires memorization, repetition and following instructions” (*id.* at 3), (c) “mental process” (Ans. 4), and (d) “a method of training comprising performing a group of throws in a kneeling position using a plurality of balls with different weights, and repeating the group of throws in a rocker position and in a run-and-gun position” (Ans. 6–7).

In our view, the last characterization (d) most accurately describes what claim 1 is “directed to.”

The “directed to” inquiry [ ] cannot simply ask whether the claims *involve* a patent-ineligible concept, because essentially every routinely patent-eligible claim involving physical products and actions *involves* a law of nature and/or natural phenomenon—after all, they take place in the physical world. *See Mayo*, 132 S. Ct. at 1293 (“For all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.”) Rather, the “directed to” inquiry applies a stage-one filter to claims, considered in light of the specification, based on whether “their character as a whole is directed to excluded subject matter.” *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015); *see Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1375, 2016 WL 1393573, at \*5 (Fed. Cir. 2016) (inquiring into “the focus of the claimed advance over the prior art”).

*Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016).

The claim’s focus is an important consideration. Here, claim 1, as a whole, is focused on a series of movements involving at least two objects of different weights repeated in three different positions; that is, steps (1) and (2) with objects X and Y at positions (A), (B), and (C). *Cf. In re TLI Communications LLC Patent Litigation*, 823 F.3d 607, 613 (Fed. Cir. 2016) (the claims’ focus “was not on an improved telephone unit or an improved server.”).

What the Specification discloses about the invention is also an important consideration. “The ‘abstract idea’ step of the inquiry calls upon us to look at the ‘focus of the claimed advance over the prior art’ to determine if the claim’s ‘character as a whole’ is directed to excluded subject matter.” *Affinity Labs of Texas, LLC v. DirectTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (quoting *Elec. Power Grp., LLC v. Alstom S.A.*,

830 F.3d 1350, 1353 (Fed. Cir. 2016); *see also Enfish*, 822 F.3d at 1335, quoted in *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1241 (Fed. Cir. 2016).

In that regard, the Background section of the Specification discusses the problem, which is that “[i]njuries are prevalent in every sport. Injuries can strike every athlete, but for professional athletes, the pressure to enhance performances brings an increased risk of injury.” Spec. ¶ 2. *See also id.* ¶ 74 (“athletes in some sports are more prone to injury than others, even when the sports use similar biomechanics”). According to the Specification, the inventor solved this problem with “training and evaluation programs described here [for providing] both strength and speed training, reducing the risk of injury while enhancing performance.” *Id.* ¶ 78. Sixty training examples are disclosed by Appellant. *Id.* ¶¶ 7–67. We find the first example, which describes positions (A), (B), and (C), most closely aligns with the claimed subject matter. *See id.* ¶ 7.

In light of the Specification’s description of the problem and solution, the advance over the prior art by Appellant’s claimed invention is a training program, whereby a series of movements involving throwing objects of different weights are repeated in three different positions for reducing risk of injury and enhancing performance. Thus, given the focus of claim 1, as a whole, is performing steps (1) and (2) with objects X and Y at positions (A), (B), and (C), and, in light of the advance over the prior art, claim 1 is properly characterized as being “directed to” a training method in which steps (1) and (2), performed with at least two objects X and Y of different weights, are repeated in three different positions (A), (B), and (C). *Cf. Intellectual Ventures I LLC v. Erie Indemnity Company*, 850 F.3d 1315,

1328 (Fed. Cir. 2017) (“the heart of the claimed invention lies in creating and using an index to search for and retrieve data . . . an abstract concept.”).

We now turn to the question of whether training by (1) and (2) with X and Y at (A), (B), and (C) to which claim 1 is “directed to” is a *patent-ineligible* concept, i.e., a law of nature, a natural phenomenon, or an abstract idea. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 73 (2012).

Training by (1) and (2) with X and Y at (A), (B), and (C) is not a law of nature (e.g., a scientific truth or mathematical expression of it (*see Mackay Radio and Telegraph Co. v. Radio Corporation of America*, 306 U.S. 86, 94 (1939)) and does not appear to be a natural phenomenon (i.e., a “naturally occurring *thing*[ ]” (*Ass’n for Molecular Pathology v. Myriad*, 133 S. Ct. 2107, 2116 (2013) (emphasis added)). Accordingly, the remaining question is whether this concept is an abstract idea.

Arguably, training by steps (1) and (2) with objects X and Y at positions (A), (B), and (C) is a method of organizing human activity. *Cf. Alice*, 134 S. Ct. at 2356–57:

The concept of risk hedging we identified as an abstract idea in that case [*Bilski*] cannot be described as a “preexisting, fundamental truth.” The patent in *Bilski* simply involved a “series of steps instructing how to hedge risk.” 561 U.S., at 599, 130 S. Ct. 3218. Although hedging is a longstanding commercial practice, *id.*, at 599, 130 S. Ct. 3218, it is a method of organizing human activity, not a “truth” about the natural world “that has always existed,” Brief for Petitioner 22 (quoting *Flook, supra*, at 593, n. 15, 98 S. Ct. 2522).

This is so because training by (1) and (2) with X and Y at (A), (B), and (C) is an exercise, and exercising is a longstanding human activity. Because claim 1 organizes a longstanding human activity into a series of instructions,

claim 1 is properly characterized as being directed to a method of organizing human activity.

Step two is “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*, 134 S. Ct. at 2355 (quoting *Mayo*, 566 U.S. at 73).

Under *Alice* step two, the Examiner determined “[t]he claims do not include additional elements that are sufficient to amount to significantly more than the judicial exception” in part because the claims do not satisfy the “machine-or-transformation test.” Ans. 5. According to the Examiner:

The claims are directed to a method or process that does not transform underlying subject matter (such as an article or materials) to a different state or thing, nor are the claims tied to a particular machine. . . . In this case, “the method for training a baseball pitcher” is not considered to be tied to a particular machine because it does not require that the method be implemented by a particular machine. The [S]pecification sets forth that the *training steps* can be carried-out by *performing a set of throws for each of a plurality of balls with different weights*. The *plurality of balls with different weights* is not considered by this examiner to qualify as a “particular machine[,]” nor do the plurality of balls transform to another state. The plurality of balls do not transform a particular article. The method for training a baseball pitcher falls under “a general concept” *i.e.* a teaching concept which requires memorization, repetition and following instructions. The plurality of balls do not implement the process steps, but are merely a means upon which the process operates.

Final Act. 2–3 (emphasis in original). *See also* Ans. 3 (“[I]mproving muscle strength through repetition of training and practice regiment is not considered patentable subject matter” and “[a] ball traveling through air is not considered [a] ‘transformation.’”). We agree.

Claim 1 does not include an element or combination of elements sufficient to ensure that the claimed method in practice amounts to significantly more than the patent-ineligible concept of training by (1) and (2) with X and Y at (A), (B), and (C) itself. We see nothing in claim 1 that transforms this concept into an inventive application. The use of balls for X and Y, which are themselves well known and conventional, does not add anything significant. At best, the use of balls limits the claimed concept to a particular field of use. *See Affinity Labs*, 838 F.3d at 1259 (“[L]imiting the field of use of the abstract idea to a particular existing technological environment does not render the claims any less abstract.”) (citing *Alice*, 134 S. Ct. at 2358). We do not find that claim 1 includes an element or combination of elements circumscribing the patent-ineligible concept it is directed to so as to integrate the concept into an inventive application.

We also believe claim 1 raises a preemption concern.

The Supreme Court has characterized preemption as a driving concern for patent eligibility. *See Alice*, 134 S. Ct. at 2354 (“*See, e.g., Bilski, supra*, at 611–612, 130 S. Ct. 3218 (upholding the patent “would pre-empt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea”). *See also id.* at 2358 (“the pre-emption concern . . . undergirds our § 101 jurisprudence”). Although preemption is not a separate patent-eligibility test, “[t]he Supreme Court has made clear that the principle of preemption is the basis for the judicial exceptions to patentability.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (citing *Alice*, 134 S. Ct. at 2354).

The Court in *Diehr* [ ] drew a distinction between those claims that “seek to pre-empt the use of” a fundamental principle, on the one hand, and claims that seek only to foreclose others from

using a particular “*application*” of that fundamental principle, on the other. 450 U.S. at 187, 101 S. Ct. 1048. Patents, by definition, grant the power to exclude others from practicing that which the patent claims. *Diehr* can be understood to suggest that whether a claim is drawn only to a fundamental principle is essentially an inquiry into the scope of that exclusion; i.e., whether the effect of allowing the claim would be to allow the patentee to pre-empt substantially all uses of that fundamental principle. If so, the claim is not drawn to patent-eligible subject matter.

*In re Bilski*, 545 F.3d at 953. Accordingly, “preemption may signal patent ineligible subject matter.” *Ariosa*, 788 F.3d at 1379. “What matters is whether a claim threatens to subsume the full scope of a fundamental concept, and when those concerns arise, we must look for meaningful limitations that prevent the claim as a whole from covering the concept’s every practical application.” *CLS Bank Int’l v. Alice Corp.*, 717 F.3d 1269, 1281 (Fed. Cir. 2013) (Lourie, J., concurring).

As we explained above under “*Claim breadth*,” claim 1 covers repeating two arguably similar movements with at least two differently weighted objects (e.g., balls) of any shape, size or type in three different positions by anyone or anything under any condition. In effect, claim 1 covers every practical application of (1) and (2) with X and Y at (A), (B), and (C).

The method of claim 1 is not limited to instances that solve a problem, for example, “reducing the risk of injury while enhancing performance.” Spec. ¶ 78. Rather, claim 1 is so broadly claimed that it amounts to no more than a series of instructions to be performed for any reason. The effect is to tie up anyone or anything from performing the recited steps for any purpose at all. Claim 1 would foreclose all future applications of steps (1) and (2)

with objects X and Y at positions (A), (B), and (C), be they innovative or not, and therefore is not patent-eligible. *Cf. Mayo*, 566 U.S. at 86–87:

And so there is a danger that the grant of patents that tie up their use will inhibit future innovation premised upon them, a danger that becomes acute when a patented process amounts to no more than an instruction to “apply the natural law,” or otherwise forecloses more future invention than the underlying discovery could reasonably justify. See generally Lemley, Risch, Sichelman, & Wagner, *Life After Bilski*, 63 *Stan. L. Rev.* 1315 (2011) (hereinafter Lemley) (arguing that § 101 reflects this kind of concern); see also C. Bohannon & H. Hovenkamp, *Creation without Restraint: Promoting Liberty and Rivalry in Innovation* 112 (2012) (“One problem with [process] patents is that the more abstractly their claims are stated, the more difficult it is to determine precisely what they cover. They risk being applied to a wide range of situations that were not anticipated by the patentee”); W. Landes & R. Posner, *The Economic Structure of Intellectual Property Law* 305–306 (2003) (The exclusion from patent law of basic truths reflects “both ... the enormous potential for rent seeking that would be created if property rights could be obtained in them and ... the enormous transaction costs that would be imposed on would-be users [of those truths]”).

...

The presence here of the basic underlying concern that these patents tie up too much future use of laws of nature simply reinforces our conclusion that the processes described in the patents are not patent eligible, while eliminating any temptation to depart from case law precedent.

*Appellant’s arguments regarding the Alice step one determination*

The arguments set forth on pages 3–7 of the Appeal Brief relating to the procedure for determining whether claimed subject matter is patent-ineligible for falling in the judicial-exceptions under 35 U.S.C. § 101 as to *Alice’s* two-step analytical framework are fully addressed above.

On page 7 of the Appeal Brief (“**ii. Even if the Examiner had provided a *prima facie* subject matter rejection, Claims 1-5 are patentable under Step 1 of *Mayo***”), the Appellant begins with a reiteration of what is required for a determination under step one of the *Alice* framework. We have no disagreement with what is said there.

Appellant argues claims 1–5 neither fall within any of the four categories of abstract ideas (i.e., (1) Fundamental economic practices, (2) Certain Methods of Organizing Human Activity, (3) An Idea Of Itself, and (4) Mathematical relationships/formulas) nor resemble any of the cases cited by the Examiner. App. Br. 7. We disagree for the reasons discussed above. Claim 1 is appropriately considered as directed to a certain method of organizing human activity, which due to its breadth, resembles the cited cases for the concern over the claims’ degree of preemption of future innovation.

Appellant argues, “[c]laims 1–5 disclose a personally adaptive therapeutic program that provides exemplary benefits of increased arm strength, health, and pitching speed. . . . This therapeutic method, therefore, is not an abstract idea.” App. Br. 7–8. This is not an accurate characterization of what the claims describe. There is nothing in the claim language about a “personally adaptive therapeutic program.” As discussed earlier, the claims describe a series of steps instructing how to train; that is, performing steps (1) and (2) with objects X and Y at positions (A), (B), and (C).

Appellant argues, “[o]n the other hand, the claimed subject matter resembles claims that the Federal Circuit recently deemed ‘precisely the type of claim that is eligible for patenting.’ *Rapid Litigation Mgmt. v.*

*CellzDirect, Inc.*, No. 15-1570, slip op. at \*8 (July 5, 2016) (citing *Alice*, 134 S. Ct. at 2354).” App. Br. 8. We disagree because there is no similarity.

*Rapid Litigation* involves “a new and useful method of preserving hepatocyte cells.” *Rapid Litigation*, 827 F.3d 1042, 1048 (Fed. Cir. 2016).

It is enough in this case to recognize that the claims are simply not directed to the ability of hepatocytes to survive multiple freeze-thaw cycles. Rather, the claims of the '929 patent are directed to a new and useful laboratory technique for preserving hepatocytes. This type of constructive process, carried out by an artisan to achieve “a new and useful end,” is precisely the type of claim that is eligible for patenting. *Alice*, 134 S. Ct. at 2354 (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67, 93 S. Ct. 253, 34 L.Ed.2d 273 (1972)).

*Id.* “At step one [ ] it is not enough to merely identify a patent-ineligible concept underlying the claim; we must determine whether that patent-ineligible concept is what the claim is ‘directed to.’ Here, the plain claim language shows that it is not.” *Id.* at 1050. We find no parallel between the claims in *Rapid Litigation* and claim 1 discussed above.

No other persuasive arguments have been presented. Thus, Appellant does not persuade us of error in the Examiner’s conclusion under *Alice* step one.

*Appellant’s arguments regarding the Alice step two determination*

Appellant asserts that “[a] method that transforms or reduces a particular article ‘to a different state or thing’ constitutes patentable subject matter by adding significantly more.” App. Br. 9 (citing “*Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *2014 Interim Guidance*, Page 74,624; MPEP §2106.”). We agree.

Although “[t]he machine-or-transformation test is not the sole test for deciding whether an invention is a patent-eligible ‘process,’” “[t]his Court’s precedents establish that the machine-or-transformation test is a useful and important clue, an investigative tool, for determining whether some claimed inventions are processes under [section] 101.” *Bilski v. Kappos*, 561 U.S. 593, 604 (2010). *See also Benson*, 409 U.S. at 70 (“Transformation and reduction of an article ‘to a different state or thing’ is the clue to the patentability of a process claim that does not include particular machines.”). It is appropriate to consider (as the Examiner did) the machine-or-transformation test in reaching a determination under step two.

While the Supreme Court has held that the machine-or-transformation test is not the sole test governing § 101 analyses, *Bilski*, 561 U.S. at 604, 130 S. Ct. 3218, that test can provide a “useful clue” in the second step of the *Alice* framework, *see Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can.*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) (holding that the machine-or-transformation test remains an important clue in determining whether some inventions are processes under § 101), *cert. denied*, 573 U.S. —, 134 S. Ct. 2870, 189 L. Ed. 2d 832 (2014). A claimed process can be patent-eligible under § 101 if: “(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.” *In re Bilski*, 545 F.3d 943, 954 (Fed. Cir. 2008) (en banc), *aff’d on other grounds*, *Bilski*, 561 U.S. 593, 130 S. Ct. 3218.

*Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014).

But here we fail to see in the claims any particular article being transformed<sup>8</sup> or reduced “to a different state or thing.” Appellant argues that “[c]laims 1–5 transform[ ] a pitcher’s shoulder and transform[ ] the ball’s position and velocity.” App. Br. 10.

The shoulder-transformation argument, however, is not commensurate in scope with what is claimed. For the reasons explained above in the “*Claim construction*” section, the claims are not limited to training a pitcher, let alone training that impacts a pitcher’s shoulder. Claim 1 does not recite a “pitcher’s shoulder,” “pitching arm,” “user’s arm,” “decelerator muscles,” or “accelerator muscles,” which are alleged to be transformed.

The ball-transformation argument (*id.* at 10–11) is also unpersuasive. We do not see how changing a ball’s position or velocity transforms or reduces the ball “to a different state or thing.” Unlike in *Diehr*, where “[t]he process operated on a computerized rubber curing apparatus and transformed raw, uncured rubber into molded, cured rubber products” (*In re Bilski*, 545 F.3d at 954), the raw material here (i.e., the ball) is not “transformed.” The ball remains the same. Notably, the central purpose of the claimed training method is not to transform a ball.

This transformation must be central to the purpose of the claimed process. But the main aspect of the transformation test that requires clarification here is what sorts of things constitute “articles” such that their transformation is sufficient to impart patent-eligibility under § 101. It is virtually self-evident that a

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<sup>8</sup> “Transform” is ordinarily defined as “a: to change in composition or structure[;] b: to change the outward form or appearance of[;] c: to change in character or condition: CONVERT.” Merriam-Webster.com accessed June 11, 2018.

process for a chemical or physical transformation of *physical objects or substances* is patent-eligible subject matter.

*Id.* at 962.

Appellant contends:

Claim 1 adds the specific limitation of “holding the ball throughout the throw” to the first throw modality, which was not well-understood, not routine, and not conventional in the field at the time of the invention. Moreover, “holding the ball throughout the throw” adds an unconventional step that confines the claim to a particular useful exemplary application, namely providing therapy to a pitcher’s arm to make it stronger, healthier, and to throw faster. Nowhere in the cited art is this first throw modality taught, nor is there any teaching of a method comprising both the first and second throw modalities. Baseball is a multi-billion dollar sport with elaborate training and rehabilitation programs for youths and professionals alike; however, this two throw modality was never a part of any routine program prior to invention by Applicant.

App. Br. 11.

We are unpersuaded. There are a number of problems with this contention and the associated arguments (*id.* at 11–12), not the least of which is that many are not commensurate in scope with what is claimed. And whether a movement is unconventional or undisclosed in the prior art is not dispositive of patent eligibility. A finding of novelty or nonobviousness, for example, does not automatically lead to the conclusion that subject matter is patent eligible. “Groundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry.” *Ass’n for Molecular Pathology*, 133 S. Ct. at 2117.

Appellant argues: “Claims 1–5 amount to significantly more than an abstract idea because they apply the method ‘with, or by use of, a particular

machine.” App. Br. 12. This argument is premised upon interpreting the claim phrase “plurality of balls with different weights” as referring to a “particular machine.” That is not correct. “The Supreme Court has defined the term ‘machine’ as ‘a concrete thing, *consisting of parts*, or of certain devices and combination of devices.’ *Burr v. Duryee*, 68 U.S. (1 Wall.) 531, 570 (1863). This ‘includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result.’ *Corning v. Burden*, 56 U.S. 252, 267 (1853).” *In re Nuijten*, 500 F.3d 1346, 1355 (Fed. Cir. 2007). Neither the claims nor the Specification requires that the balls comprise any parts, and thus, the claimed balls cannot be properly construed as machines.

Ostensibly as support for its position that a plurality of balls is a particular machine, Appellant cites *Ex parte Bard*, Appeal 2011-009704 (PTAB Aug. 22, 2013) and *Ex parte Palmer*, Appeal 2012-003262 (PTAB March 02, 2015), two non-precedential decisions in which the Board reversed rejections under 35 U.S.C. § 101. App. Br. 13. What a different panel did in a different situation under a different set of facts has little bearing on how this case should be disposed of. Nevertheless, we do not find that those decisions support Appellant’s contention that “the claimed ‘plurality of balls with different weights’ satisfies the machine-or-transformation test” (App. Br. 13). *Ex parte Bard* involved a method of training a player via a “foot-shaped support” that “*consists of various parts*, including heel, toe, insole and outsole regions and first and second incline surfaces.” Slip op. 5 (emphasis added). *Ex parte Palmer* involved “a deck of fifty-six cards comprising the standard fifty-two rank and suit cards *with the addition* of four cards of rank ‘1’ in each of the standard suits.” Slip op.

at 2 (emphasis added). We do not see, and Appellant does not explain, how “a plurality of balls with different weights” (claim 1) is comparable to the particular foot-shaped support at issue in *Ex parte Bard* or the particular deck of fifty-six cards with unique card markings that was at issue in *Ex parte Palmer*.

In our view, the Federal Circuit’s precedential decision in *In re Smith*, 815 F.3d 816 (Fed. Cir. 2016) is instructive, at least with respect to the second step of the *Alice/Mayo* framework. Under step two of *Alice/Mayo*, the court noted that “[t]he claims here require shuffling and dealing ‘physical playing cards.’” *Id.* at 819. The court concluded that “[j]ust as the recitation of computer implementation fell short in *Alice*, shuffling and dealing a standard deck of cards are ‘purely conventional’ activities” that do not amount to an “inventive concept” under *Alice/Mayo* step two (citing *Alice*, 134 S. Ct. at 2358–59). According to Appellant, *Smith* is distinguishable “because the present claims include a non-conventional two throw modality that includes a first throw where the pitcher holds the ball throughout the throw and a second throw modality where the pitcher releases the ball during the throw.” Reply Br. 10. But holding a ball for the duration of a throwing motion and throwing the ball are well-known, routine, and conventional practice. For example, in a baseball game, pitchers will sometimes “fake” a throw to a base without releasing the ball (e.g., when a runner is leading off from the base).

As discussed above, Appellant’s argument that “[c]laims 1-5 amount to significantly more than an abstract idea because they improve a therapeutic process for enhancing the functionality of shoulder muscles” (App. Br. 14) (emphasis omitted) is not commensurate in scope with what is

claimed. No other persuasive arguments having been presented, we are not persuaded of error under *Alice* step two that claim 1 does not include an element or combination of elements circumscribing the patent-ineligible concept it is directed to so as to integrate the concept into an inventive application.

Accordingly, we find the Examiner’s conclusion that representative claim 1, and claims 2–5 which fall with claim 1, are directed to patent-ineligible subject matter under 35 U.S.C. § 101 is proper. *Cf. LendingTree, LLC v. Zillow, Inc.*, 656 F. App’x 991, 997 (Fed. Cir. 2016) (“We have considered all of LendingTree’s remaining arguments and have found them unpersuasive. Accordingly, because the asserted claims of the patents in suit are directed to an abstract idea and do not present an ‘inventive concept,’ we hold that they are directed to ineligible subject matter under 35 U.S.C. § 101.”).

In view of the foregoing, we sustain the rejection under § 101. Because our reasoning departs substantially from that of the Examiner, we denominate our affirmance as a new ground of rejection.

*The rejection of claims 1–5 are rejected under 35 U.S.C. § 102(b) as anticipated by, or alternatively under 35 U.S.C. § 103(a) as obvious over “NPL (baseball drills), [and/or] NPL (Weighted ball for baseball drills),” and Corley.*

*Anticipation*

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). The Examiner has not explained how all of the

limitations of claims 1–5 are found in a single prior art reference.  
Accordingly, the anticipation rejection is not sustained.

*Obviousness*

A rejection based on 35 U.S.C. § 103 clearly must rest on a factual basis. The Examiner has the initial burden of supplying the factual basis for the rejection and may not resort to speculation, unfounded assumptions, or hindsight reconstruction to supply deficiencies in its factual basis. *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967).

We agree with the Appellant (*see* App. Br. 20) that the Examiner has not provided articulated reasoning with rational underpinnings for combining the cited references to arrive at the claimed invention without impermissible hindsight. The Examiner does not provide any objective reason to combine the teachings of the cited references. *See In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”) (quoted with approval in *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)). As such, we do not sustain the Examiner’s rejection of claim 1 under 35 U.S.C. § 103(a).

For the same reasons, we also do not sustain the rejection of dependent claims 2–5. *Cf. In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992) (“[D]ependent claims are nonobvious if the independent claims from which they depend are nonobvious.”).

DECISION

The rejection of claims 1–5 under 35 U.S.C. § 101 is affirmed but denominated as a new ground of rejection.

The rejection of claims 1–5 under 35 U.S.C. § 102(b) is reversed.

The rejection of claims 1–5 under 35 U.S.C. § 103(a) is reversed.

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 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 proceeding 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)(1)(iv).

AFFIRMED; 37 C.F.R. § 41.50(b)