UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/378,449	12/14/2016	Kazuo UCHIDA	Q229844	5545

23373   7590   08/25/2020
SUGHRUE MION, PLLC
2000 PENNSYLVANIA AVENUE, N.W.
SUITE 900
WASHINGTON, DC 20006

EXAMINER
STANCZAK, MATTHEW BRIAN

ART UNIT	PAPER NUMBER
3711	

NOTIFICATION DATE	DELIVERY MODE
08/25/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PPROCESSING@SUGHRUE.COM
USPTO@sughrue.com
sughrue@sughrue.com

UNITED STATES PATENT AND TRADEMARK OFFICE

_____

BEFORE THE PATENT TRIAL AND APPEAL BOARD

_____

Ex parte KAZUO UCHIDA and ATSUSHI KOMATSU

_____

Appeal 2019-004729
Application 15/378,449
Technology Center 3700

_____

Before BENJAMIN D. M. WOOD, BRANDON J. WARNER, and
LEE L. STEPINA, *Administrative Patent Judges.*

WOOD, *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 1–4 and 6. *See* Non-Final Act. Act. 1.
An oral hearing in accordance with 37 C.F.R. § 41.47 was held on July 23,
2020, a transcript of which will be entered into the record in due course. We
have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

---

[1] "Appellant" refers to the applicant as defined by 37 C.F.R. § 1.42.
Appellant identifies the real parties in interest as BRIDGESTONE
CORPORATION and BRIDGESTONE SPORTS CO., LTD. Appeal Br. 3.

CLAIMED SUBJECT MATTER

The claims are directed to a golf ball. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A golf ball having a cover, wherein, provided that
l_b (g·cm^2) represents a moment of inertia of the golf ball,

μ (mm) represents deflection hardness corresponding to a deformation amount (mm) of the golf ball in a load direction from when an initial load of 10 kgf is applied to the golf ball to when a final load of 130 kgf is applied to the golf ball, and
D represents Shore D hardness of the cover,

a spin change amount predictive index ΔS' represented by the following formula:

$$\Delta S' = \left(\frac{\mu}{D}\right)^2 \frac{82 - I_b}{82^2} \bullet 10^6$$

is from 3.3 to 6.2,

wherein the value of μ satisfies:

$3.0 \text{ mm} \leq \mu \leq 3.5 \text{ mm}$.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Binette	US 6,413,170 B1	July 2, 2002
Sullivan	US 2010/0081517 A1	Apr. 1, 2010

Dalton, J, *Compression by any other name*, Science and Golf IV, Proceedings of the World Scientific Congress of Golf (Eric Thain ed., Routledge, 2002) ("Dalton").

REJECTIONS

Claims Rejected	35 U.S.C. §	Reference(s)/Basis
1–4, 6	112(b)	Indefiniteness
3, 4	112(b)	Indefiniteness
1–4	102	Sullivan
1–4	103	Sullivan, Binette
6	103	Sullivan, Binette, Dalton

OPINION

A.   Claims 1–4 and 6—Rejected as Indefinite

The Examiner finds that claims 1–4 and 6 are indefinite because Appellant "amend[ed] claim 1 to remove the range values for D and I_b," and therefore "the ranges of values used are indefinite making the resulting equation for $\Delta S'$ indefinite." Non-Final Act. 2. Appellant responds that "there is no requirement that ranges be recited for each variable in an equation recited in a patent application claim." Appeal Br. 6. In the Answer, the Examiner counters that "[A]ppellant has removed the limitations on Shore D and MOI (i.e., essentially removed the species) to encompass any values that may work to arrive at their claimed $\Delta S'$ range of 3.3 to 6.2 (i.e., they now essentially claim the genus . . .)." Ans. 6.

We do not to sustain this rejection. As the Examiner acknowledges, Appellant's amendment of claim 1 broadens its scope; however, that does not, by itself, render the claim indefinite. *See In re Johnson*, 558 F.2d 1008, 1016 n.17 (CCPA 1977) (breadth is not indefiniteness).

B.   Claims 3 and 4—Rejected as Indefinite

Appellant does not appeal the Examiner's rejection of claims 3 and 4 as indefinite. Appeal Br. 6. Therefore, this rejection is summarily sustained.

See Manual of Patent Examining Procedure § 1205.02 (9th ed., Rev. 10, June 2020) ("If a ground of rejection stated by the examiner is not addressed in the appellant's brief, appellant has waived any challenge to that ground of rejection and the Board may summarily sustain it, unless the examiner subsequently withdrew the rejection in the examiner's answer.").

C. Claims 1–4—Rejected as Anticipated by Sullivan

The Examiner finds that Sullivan discloses specific ranges for moment of inertia ("MOI", which claim 1 designates "I_b"), "deformation/compression" (corresponding to "deflection hardness," or μ, recited in claim 1), and shore D hardness of the golf ball cover, from which ranges values can be taken and used in the claimed $\Delta S'$ equation to obtain a $\Delta S'$ value that falls within the claimed range for $\Delta S'$. *See* Non-Final Act. 4–5 (citing Sullivan ¶¶ 90, 135, 138).[2] Specifically, the Examiner selects a value of 76 g-cm^2 for I_b, 3.5 mm for μ, and a Shore D hardness of 50; and obtains a $\Delta S'$ value of 4.4. *Id.* at 4. Appellant responds that Sullivan does not anticipate the claims because it does not disclose any specific single

---

[2] As the name implies, "deflection hardness" reflects hardness or softness of the golf ball. Spec. ¶ 16. It is determined by how much the ball deforms in a load direction when a given force is applied. *Id.* The specific deflection-hardness measurement disclosed in the Specification is referred to elsewhere in the record as "130-10 kg deflection" (Sullivan ¶ 135) or "the 130-10 kg test" (Dalton, 3). The higher the value of the deflection hardness, the softer the golf ball. There are other ways to quantify a ball's hardness. For example, Sullivan uses "Atti compression," which is a measure of the travel of a compressing spring rather than a measure of the ball's deflection. Sullivan ¶ 135; Dalton, 1–2. Atti-compression values can be converted to deflection hardness values using a conversion factor disclosed in Dalton. Dalton, 7–9. Lower Atti-compression values correspond to higher deflection values, and vice versa. *Id.* at 7.

embodiment having values for I_b, μ, and Shore D (such as those selected by the Examiner) that result in a ΔS' value from 3.3 to 6.6.

We agree. Our reviewing court has held that the disclosure of a range does not necessarily constitute a disclosure of the end points of the range or any specific point within the range. *Atofina v. Great Lakes Chem. Corp.*, 441 F.3d 991, 999–1000 (Fed. Cir. 2006). Thus, Sullivan's disclosure of ranges of I_b, μ, and Shore D from which selected values of 76, 3.5, and 50, respectively, can be taken, does not necessarily constitute a disclosure of these specific values from within the more broadly disclosed ranges. The Examiner notes that a claimed range can be anticipated if it is disclosed in the prior art "with sufficient specificity." Ans. 7 (quoting MPEP § 2121.03(II)). Here, however, we disagree with the Examiner that the broad ranges disclosed in Sullivan disclose with sufficient specificity values that result in a ΔS' between 3.3 and 6.6. Accordingly, we do not sustain the Examiner's anticipation rejection.

D. *Claims 1–4—Rejected as Unpatentable over Sullivan and Binette*

Appellant argues claims 1–4 as a group. Appeal Br. 6–11. We select claim 1 as representative, and decide the appeal of this rejection on the basis of claim 1 alone. 37 C.F.R. § 41.37(c)(1)(iv).

As noted above, the Examiner finds that Sullivan discloses ranges of values for MOI/I_b, deflection hardness/μ, and Shore D hardness of the cover that encompass values that, when used in the claimed ΔS' equation, result in ΔS' values that fall within the claimed ΔS' range. The Examiner further finds that Binette teaches that MOI/I_b, deflection hardness/μ, and cover Shore D hardness are result-effective variables known to control a golf ball's

spin. Non-Final Act. 4–5 (citing Binette, 7:29–32, 8:39–42, 36:25–38); Ans. 8 (citing Binette, 7:29–32, 8:39–42, 36:32–48).

Appellant responds that it is not sufficient to find that moment of inertia/I_b, compression hardness/μ, and Shore D hardness are result-effective variables; instead, "the Examiner must find some cited art that recognizes ΔS' as a result effective variable." Appeal Br. 8.

Appellant has not persuaded us that the Examiner erred in rejecting claims 1–4 as obvious over Sullivan and Binette. In particular, we are not persuaded that the Examiner was required to show that ΔS', itself, is a result-effective variable. The variable ΔS' represents the expected change in a golf ball's spin rate—compared with a "standard" golf ball—based on changes to a standard golf ball's MOI, deflection hardness, and cover Shore D hardness. Spec. ¶¶ 20–27. It was known in the art that a golf ball's spin rate "is an important golf ball characteristic for both the skilled and unskilled golfer." Binette, 4:35–36. It was also known that a golf ball's MOI, deflection hardness, and Shore D hardness affect a golf ball's spin rate. Binette teaches that a greater MOI "results in less spin." *Id.* at 7:30–33, 8:39–42. Binette also teaches that "[t]he degree of compression of a ball against the club face and the softness of the cover strongly influences the resultant spin rate." *Id.* at 36:34–39. Likewise, Sullivan teaches that "compression is an important factor in golf ball design" that can "affect the ball's spin rate off the driver and the feel." Sullivan ¶ 135; *see also* Dalton, 1 (same). Thus, we agree with the Examiner than MOI/I_b, deflection hardness/μ, and cover Shore D hardness are result-effective variables known to influence a golf ball's spin rate. The claimed equation represents the known relationship between a golf ball's MOI/I_b, deflection hardness/μ, and

cover Shore D and spin rate. One of ordinary skill in the art, seeking a given spin rate, would know to manipulate these variables to obtain a desired spin rate.

In this regard, the Federal Circuit's decision in *In re Applied Materials, Inc.*, 692 F.3d 1289 (2012) is instructive. In *Applied Materials*, the claims at issue were drawn to a grooved polishing pad for chemical mechanical polishing of integrated-circuit substrates. *Id.* at 1292. The claims specified ranges for three specific parameters: The depth, width, and pitch of the pad grooves. *Id.* at 1293. There, appellant Applied Materials asserted that the multiple dimensional parameter values were "selected based on multiple criteria, with trade-offs among the several results obtained based on the selection of those variables (such as selecting pitch and width to balance pad flexibility, difficulty in removing waste material, and slurry transport)." *Id.* at 1294–95 (internal quotation marks omitted). The court determined, however, that "[t]he mere fact that multiple result-effective variables were combined does not necessarily render their combination beyond the capability of a person having ordinary skill in the art." *Id.* at 1298. Although "[e]vidence that the variables interacted in an unpredictable or unexpected way could render the combination nonobvious," appellant in that case "failed to show anything unpredictable or unexpected in the interaction of the variables." *Id.*

Here, the claimed spin rate equation represents the combination of MOI/I_b, deflection hardness/μ, and cover shore D hardness on a ball's spin rate. As in *Applied Materials*, the combination of these variables "does not necessarily render their combination beyond the capability of a person having ordinary skill in the art." *Applied Materials*, 692 F.3d at 1298.

7

Further, Appellant has not brought to our attention any evidence that MOI/I_b, compression hardness/μ, and Shore D hardness interact in an unpredictable or unexpected way that would render the combination nonobvious, and we discern no such evidence from the record.

For the above reasons, we sustain the Examiner's rejection of claims 1–4 as unpatentable over Sullivan and Binette.

E. Claim 6—Rejected as Unpatentable over Sullivan, Binette, and Dalton

Appellant does not separately argue the patentability of claim 6, which depends from claim 1. Accordingly, for the reasons discussed above in connection with claim 1, we sustain the Examiner's rejection of claim 6 as unpatentable over Sullivan, Binette, and Dalton.

CONCLUSION

The Examiner's rejections are decided as follows:

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–4, 6	112(b)	Indefiniteness		1–4, 6
3, 4	112(b)	Indefiniteness	3, 4	
1–4	102	Sullivan		1–4
1–4	103	Sullivan, Binette	1–4	
6	103	Sullivan, Binette, Dalton	6	
Overall Outcome:			1–4, 6	

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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED