Trials@uspto.gov
Tel: 571-272-7822

Paper 105
Date: December 2, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VALVE CORPORATION,
Petitioner,

v.

IRONBURG INVENTIONS LTD.,
Patent Owner.

IPR2017-00858
Patent 9,289,688 B2

Before MEREDITH C. PETRAVICK, ANNETTE R. REIMERS, and MITCHELL G. WEATHERLY, *Administrative Patent Judges.*

WEATHERLY, *Administrative Patent Judge.*

JUDGMENT
Final Written Decision on Remand
Determining All Challenged Claims Unpatentable
35 U.S.C. §§ 144, 318

I. INTRODUCTION

A. Trial Background

Valve Corporation ("Valve") filed a petition (Paper 1, "Pet.") to institute an *inter partes* review of claims 1–3, 9, 10, 18–22, and 26–30 (the "challenged claims") of U.S. Patent No. 9,289,688 B2 (Ex. 1001, "the

'688 patent"). 35 U.S.C. § 311. Valve supported the Petition with a Declaration from David Rempel, M.D. (Ex. 1009). Ironburg Inventions Ltd. ("Ironburg") timely filed a Preliminary Response. Paper 6 ("Prelim. Resp."). On September 1, 2017, based on the record before us at the time, we instituted an *inter partes* review of claims 1–3, 9, 10, 20, 22, and 26–30. Paper 7 ("Institution Decision" or "Inst. Dec."). On May 7, 2018, pursuant to *SAS Institute, Inc. v. Iancu*, 138 S. Ct. 1348 (2018), we modified our Institution Decision and reintroduced into this proceeding all challenges to the patentability of claims 1–3, 9, 10, 18–22, and 26–30 alleged in the Petition. Paper 28 ("*SAS* Order"). Accordingly, we conducted a trial on all challenges to the claims as summarized below:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 9, 10, 20, 22, 26–30	102(a)(2)	Uy[1]
1, 26, 30	103	Bellinghausen,[2] Burns[3]
1, 2, 18, 19, 21, 26, 28–30	103	Burns, LaCelle[4]
1, 2, 9, 10, 21, 30	103	Burns, Knight[5]
1, 2, 9, 10, 20, 26, 28–30	102(a)(1)	Butler[6]

[1] U.S. Patent App. Pub. 2015/0238855 A1 (Ex. 1002, "Uy").

[2] U.S. Patent No. D711,881 S (Ex. 1003, "Bellinghausen").

[3] Burns, David, Review: Scuf Xbox 360 Controller, https://www.xboxer360/features/reviewscuf-xbox-360-controller/ (Ex. 1004, "Burns").

[4] U.S. Patent No. D419,985 (Ex. 1005, "LaCelle").

[5] U.S. Patent No. D502,468 S (Ex. 1007, "Knight").

[6] Butler, Harry, Razer Sabertooth Review, http://www.bit-tech.net/hardware/2013/03/11/razer-sabertooth-review/1 (Ex. 1008, "Butler").

After we instituted this review, Ironburg filed a Patent Owner Response in opposition to the Petition (Paper 14, "PO Resp.") that was supported by a Declaration from Glen Stevick, Ph.D. (Ex. 2001). Valve filed a Reply in support of the Petition. (Paper 19, "Reply"). With our authorization, Ironburg filed a Supplemental Patent Owner Response (Paper 39, "Supp. PO Resp.") to address the challenges to claims reintroduced pursuant to the *SAS* Order. Valve filed a Supplemental Reply in support of the Petition and responding to the Supplemental Patent Owner Response (Paper 43, "Supp. Reply"), which was supported by another Declaration of Dr. Rempel (Ex. 1019). With our authorization, Ironburg filed a Surreply addressing arguments set forth in Valve's Supplemental Reply. (Paper 50, "Ironburg Surreply"). Also with our authorization, Valve filed a brief responding to the Ironburg Surreply. (Paper 52, the "Valve Surreply"). Each party also submitted a brief addressing the relevance of deposition testimony from Simon Burgess (Exhibit 1046). Paper 59 (the "Burgess Brief"); Paper 62 (the "Burgess Resp."). Ironburg did not move to amend any claim of the '688 patent.

We entered a corrected Final Written Decision (Paper 68, "Decision" or "Dec.") in which we concluded that Valve had demonstrated by a preponderance of evidence that Uy anticipated claims 1, 2, 9, 10, 20, 22, 27, 28, and 30 of the '688 patent, but failed to do so for claims 3, 26, and 29. Dec. 21–29. We also concluded that Valve had failed to demonstrate by a preponderance of evidence that Butler anticipated any claim of the '688 patent. *Id*. at 29–32. Lastly, we also concluded that Valve had failed to prove by a preponderance of evidence that Burns was a prior art printed publication. *Id*. at 32–39. On this basis, we concluded that Valve's

collective challenges to the patentability of claims 1, 2, 9, 10, 18, 19, 21, 26, and 28–30 as being obvious over the combination of Burns in view of one of Bellinghausen, LaCelle, or Knight failed. *Id.*

B. The First Appeal to the Federal Circuit

On August 17, 2021, the Federal Circuit affirmed-in-part, vacated-in-part, and remanded-in-part our prior Decision. *Valve Corp. v. Ironburg Inventions Ltd.*, 8 F.4th 1364, 1381 (Fed. Cir. 2021) ("Valve I"). Paper 76.[7] The Federal Circuit affirmed our determination that Uy anticipated claims 1, 2, 9, 10, 20, 22, 27, 28, and 30. *Valve I*, 8 F.4th at 1381. The Federal Circuit also affirmed our determination that Uy did not anticipate claim 29. *Id.* at 1378–79. Valve did not appeal our Decision to the extent that we concluded that Uy did not anticipate claims 3 and 26 and that Butler did not anticipate claims 1, 2, 9, 10, 20, 26, and 28–30. *Id.* at 1368–69, n.1. The Federal Circuit reversed our determination that Burns was not prior art. *Id.* at 1381. The Federal Circuit also vacated our determination that claims 18, 19, 21, 26, and 29 had not been proven unpatentable as obvious in view of Burns in combination with various other prior art references. *Id.* Accordingly, the Federal Circuit remanded the case to us to consider Valve's challenges to the patentability of claims 18, 19, 21, 26, and 29 of the '688 patent as obvious based on the combinations of prior art listed in the table below.

Claim(s)	35 U.S.C. §	References
18, 19, 21, 26, 29	103	Burns, LaCelle
21	103	Burns, Knight
26	103	Bellinghausen, Burns

Id.

[7] The Federal Circuit issued its mandate on October 8, 2021. Paper 75.

C. The Final Written Decision on Remand from the First Appeal

On January 26, 2023, we entered our Final Written Decision on Remand in which we again found that Valve had failed to demonstrate that claims 18, 19, 21, 26, and 29 were unpatentable as obvious. Paper 87, 19–20 ("Remand Decision" or "Remand Dec."). We found that Valve had failed to demonstrate that an ordinarily skilled artisan would have been motivated to combine teachings of Burns with those from LaCelle, Knight, or Bellinghausen. *Id.* at 18.

D. The Second Appeal to the Federal Circuit

On April 23, 2025, the Federal Circuit vacated our Remand Decision and remanded the case to us to address two issues. *Valve Corp. v. Ironburg Inventions Ltd.*, No. 2023-1725, 2025 WL 1177824 (Fed. Cir. Apr. 23, 2025). Paper 90 ("Valve II").[8] First, "whether Valve has shown that the challenged dependent claims are patentably distinct from claim 1" under a theory of collateral estoppel. *Valve2* 12. Second, whether Valve has proven the unpatentability of claims 18, 19, 21, 26, and 29 as obvious over Burns in view of LaCelle[9] as originally set forth in the Petition. *Id.*

E. Second Remand Background

On this remand ordered in *Valve II*, we entered a scheduling order in which we authorized the parties to file a series of four briefs with Valve filing the first and third briefs in the series and Ironburg filing the second and fourth briefs. Paper 100, 4–5. We found that the *Valve II* decision

[8] The Federal Circuit issued its mandate on May 30, 2025. Paper 89.

[9] Valve did not appeal our prior determinations that it had failed to demonstrate that the combined teachings of Bellinghausen and Burns rendered claim 21 obvious or that the combined teachings of Burns and Knight rendered claim 26 obvious. *Valve II* 5, n.2.

dictated that we permit Valve to introduce new evidence and argument on the first issue on remand. *Id*. at 2–3. As permitted in our scheduling order, Valve filed an opening brief (Paper 101, "Valve Remand Br."). Ironburg filed a responsive brief (Paper 102, "Ironburg Remand Br."). Valve filed a Reply responding to Ironburg's responsive brief (Paper 103, "Valve Remand Reply"). Ironburg filed a Sur-reply responding to Valve's Remand Reply (Paper 104, "Ironburg Remand Reply").

This Final Written Decision is issued pursuant to 35 U.S.C. §§ 144, 318(a) and 37 C.F.R. § 42.73. For the reasons expressed below, we conclude that Valve has demonstrated by a preponderance of evidence that claims 18, 19, 21, 26, and 29 are unpatentable as obvious.

F. Related Proceedings

The parties have identified as a related proceeding the co-pending district court litigation of *Ironburg Inventions Ltd. v. Valve Corporation*, Case No. 1:15-cv-04219-MHC (N.D. Ga.). Paper 3, 1; Pet. 1. Valve also identifies *Ironburg Inventions Ltd. v. Collective Minds Gaming Co. Ltd.*, Case No. 1:16-cv-04110-MHC (N.D. Ga.). Pet. 2. Valve also identifies *inter partes* review proceedings IPR2016-00948, IPR2016-00949, IPR2017-00136, IPR2017-00137 as related proceedings because they collectively address related U.S. Patent No. 9,089,770 B2.[10] *Id*. We issued final written decisions in IPR2016-00948 and IPR2016-00949. We terminated IPR2017-00136 and IPR2017-00137 without issuing final written decisions in response to the joint motions of the parties after they settled their disputes.

[10] Valve mistakenly refers to IPR2016-00136 and IPR2016-00137 rather than IPR2017-00136 and IPR2017-00137. Pet. 1–2.

G. The '688 Patent

The '688 patent relates to "controllers for controlling the play of computerized games; more particularly, . . . to an actuator system of a game controller for a gaming console." Ex. 1001, 1:13–17. The Specification describes conventional controllers as having controls such as buttons, analog control sticks, bumpers, and triggers mounted to the top and front surfaces of the controller that are intended to be actuated by the user's thumbs or index fingers. *Id*. at 1:27–54. A user may grip these conventional controllers by wrapping the middle, ring, and little fingers around two spaced-apart grip portions. *Id*. at 1:55–58.

The Specification describes one embodiment in which controller 10 includes allegedly novel paddle levers 11A–D that a user may actuate with the middle, ring, and/or little fingers on the "rear" or underside of controller body 14 as shown in Figure 5, which we reproduce below.

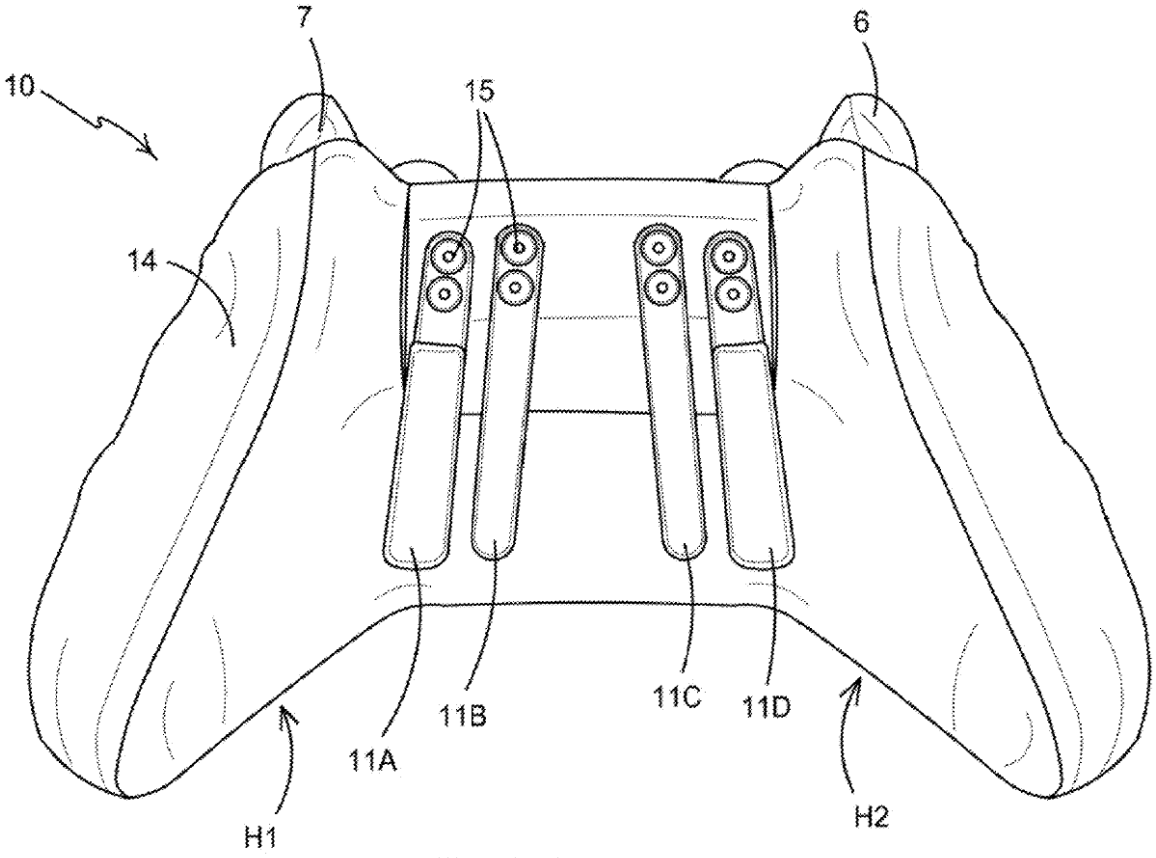


FIGURE 5

Figure 5 is "a plan view from below of the rear panel of the games controller of FIG. 1." *Id*. at 4:28–29.

In one embodiment, the lower surface of outermost paddle levers 11A, 11D are oriented at an angle β relative to surface S_B of controller 10, as shown in Figure 7, which we reproduce below. *Id*. at 8:12–16.

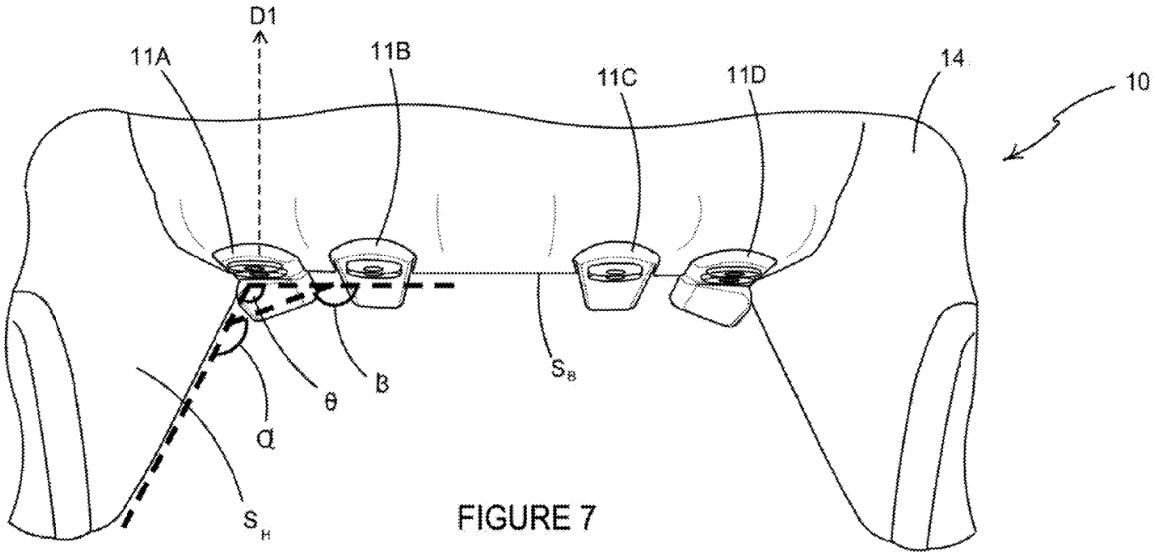


FIGURE 7

Figure 7 is an enlarged front view of the games controller of Figure 1 showing the relationship among paddles 11A–D, the rear of controller body 14, and handles H1, H2.

The configuration and arrangement of paddle levers 11A, 11D as compared to adjacent paddle levers 11B, 11C enables the user (1) to "readily find the adjacent paddle 11B, 11C" without needing to "disengage or lift off the outermost paddle 11A, 11D" and (2) to "maintain touching contact therewith whilst actuating one of the inner paddles 11B, 11C." *Id.* at 7:56–60.

Independent claim 1, from which all challenged claims depend, recites:

> 1. A games controller comprising:
>
> a case; and
>
> a plurality of controls located on a front end and a top of the case;
>
> the case being shaped to be held in both hands of a user such that the user's thumbs are positioned to operate controls located on the top of the case and the user's index fingers are positioned to operate controls located on the front end of the case; wherein

> the games controller further comprises at least one first additional control located on a back of the case in a position operable by a middle, ring or little finger of the user,
>
> the first additional control comprising a first elongate member displaceable by the user to activate a control function, wherein
>
> the first elongate member comprises a first surface disposed proximate an outer surface of the case and
>
> the first elongate member comprises a second surface opposing the first surface, the second surface being configured and arranged to be non-parallel with a portion of the outer surface of the back of the case to which the first elongate member is mounted.

Id. at 9:28–48 (with line breaks added for clarity). The challenged claims remaining at issue are addressed individually below.

II. ANALYSIS

A. Claim Interpretation

"A claim in an unexpired patent that will not expire before a final written decision is issued shall be given its broadest reasonable construction in light of the specification of the patent in which it appears." 37 C.F.R. § 42.100(b) (2016)[11]; *see also Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (affirming that USPTO has statutory authority to construe claims according to Rule 42.100(b)). When applying that standard,

[11] Our recently changed version of this Rule, which requires that we interpret claims in the same manner used in a civil action under 35 U.S.C. § 282(b), does not apply here because the Petition was filed before the effective date of the new Rule, November 13, 2018. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340, 51,344 (Oct. 11, 2018).

we interpret the claim language as it would be understood by one of ordinary skill in the art in light of the specification. *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010). Thus, we give claim terms their ordinary and customary meaning as they would be understood by an ordinarily skilled artisan. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) ("The ordinary and customary meaning 'is the meaning that the term would have to a person of ordinary skill in the art in question.'") (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005)). Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

We expressly address the meaning of any particular claim language below as needed to determine whether Valve has established that any claim remaining at issue is unpatentable.

B. Legal Standards

The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), reaffirmed the framework for determining obviousness as set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The *KSR* Court summarized the four factual inquiries set forth in *Graham* that we apply in determining whether a claim is unpatentable as obvious under 35 U.S.C. § 103(a) as follows: (1) determining the scope and content of the prior art, (2) ascertaining the differences between the prior art and the claims at issue, (3) resolving the level of ordinary skill in the pertinent art, and (4) when in evidence, considering objective evidence indicating obviousness or nonobviousness. *KSR*, 550 U.S. at 406 (citing *Graham*, 383 U.S. at 17–18).

Valve must explain how the proposed combinations of prior art would have rendered the challenged claims unpatentable. An obviousness analysis "need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR*, 550 U.S. at 418; *accord In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007). However, Valve cannot satisfy its burden of proving obviousness by employing "mere conclusory statements," but "must instead articulate specific reasoning, based on evidence of record" to support an obviousness determination. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380–81 (Fed. Cir. 2016). Valve also must articulate a reason why a person of ordinary skill in the art would have combined the prior art references. *NuVasive*, 842 F.3d at 1382.

C. Level of Ordinary Skill

We review the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art at the time of the invention. *Graham*, 383 U.S. at 17. Valve contends that the ordinarily skilled artisan would have:

> a bachelor's degree in an industrial design or engineering field, and approximately two years of relevant experience, for example. Alternatively, the same or an equivalent level of skill in the art could be obtained by end users or hobbyists who have substantial experience modifying or creating customized game controllers that include features to better suit their needs, even without any college education.

Pet. 10 (citing Ex. 1009 ¶ 11). Ironburg, without expressly defining the level of ordinary skill, contends that a college degree of the type identified by Valve is not required. *See* Supp. PO Resp. 4–6. Ironburg notes that the

level of ordinary skill is "relatively low" and the technology involved "is simple and straightforward." *Id.* at 4 (citing Ex. 2016 ¶ 21). Ironburg's contentions regarding the level of ordinary skill are consistent with Valve's position, *id.* at 6, which we apply in our analysis.

D. Whether Claims 18, 19, 21, 26, and 29 Are "Patentably Distinct" from Claim 1 under a Theory of Collateral Estoppel

The Federal Circuit has held that its "decision in *Valve I* affirmed that claim 1 was unpatentable, and the language of the opinion and mandate from *Valve I* required that the Board treat the patentability of claim 1 as no longer 'at issue.'" *Valve II*, 8. The Federal Circuit instructed that, on remand, we shall "address whether Valve has shown that the challenged dependent claims [18, 19, 21, 26, and 29] are patentably distinct from claim 1." *Valve II*, 12. The Federal Circuit explained that: "If the unadjudicated patent claims do not 'present materially different issues that alter the question of patentability,' they are said to be 'patentably [in]distinct' from the adjudicated claims, and issue preclusion applies." *Id.* at 10–11 (citing *MaxLinear, Inc. v. CF CRESPE LLC*, 880 F.3d 1373, 1377–78 (Fed. Cir. 2018)).

Valve argues that the analysis of whether a claim is "patentably distinct" from another claim has a "specialized meaning" in patent law that encompasses determinations of: (1) whether claimed inventions in interference proceedings are distinct from each other, (2) whether obviousness-type double patenting prevents an applicant from obtaining "duplicative claims" that are not "patentably distinct," and (3) whether 37 C.F.R. § 42.73(d)(3)(i) prevents a patentee from obtaining claims that are not "patentably distinct" from claims that have been finally refused or cancelled in an adverse judgment. Valve Remand Br. 3–4 (citing *SoftView*

LLC v. Apple Inc., 108 F.4th 1366, 1371 (Fed. Cir. 2024)). Valve further argues that:

> The use of the term "patentably distinct" in IPR proceedings should "invoke the term's established meaning" in these various contexts "because the term 'patentably distinct' serves a similar purpose in all three settings." That purpose is: "to prohibit a patentee from exploiting patent claims that are not materially distinguishable from claims that have either expired or been invalidated in prior proceedings."

Id. at 4 (citing *SoftView*, 108 F.4th at 1371).

Ironburg argues that claims can only be found to be "patentably [in]distinct" "when the unadjudicated claims do not 'present materially different issues that alter the question of patentability.'" Ironburg Remand Br. 2–4 (citing *MaxLinear, Inc. v. CF CRESPE LLC*, 880 F.3d 1373, 1377–78 (Fed. Cir. 2018)). "Whether the differences between the patent claims materially alter the question of patentability is a legal conclusion based on underlying facts." *Google LLC v. Hammond Dev. Int'l, Inc.*, 54 F.4th 1377, 1381 (Fed. Cir. 2022). In *Google*, the Federal Circuit set forth the test for determining whether collateral estoppel applies as follows:

> The party seeking to invoke collateral estoppel must show:
>
> (1) the issue is identical to one decided in the first action; (2) the issue was actually litigated in the first action; (3) resolution of the issue was essential to a final judgment in the first action; and (4) [the party against whom collateral estoppel is being asserted] had a full and fair opportunity to litigate the issue in the first action.

Google, 54 F.4th at 1381 (citing *In re Freeman*, 30 F.3d 1459, 1465 (Fed. Cir. 1994). Ironburg argues that:

> Simply, if there are substantive differences between two claims, then the inquiry focuses on whether the differences require a different invalidity analysis (e.g., new pertinent art, new claim

> elements, a different application of the art) or if the combination of the claim elements when viewed as a whole would render the addition obvious and not patentably distinct.

Ironburg Remand Br. 4 (citing *Westwood Chem., Inc. v. United States*, 525 F.2d 1367, 1375 (Ct. Cl. 1975)). Ironburg contends that Valve's showing that the challenged dependent claims are "patentably indistinct" is fatally flawed because Valve relies on new prior art that was not raised in the Petition, which demonstrates that the issue of patentability is materially different for the challenged dependent claims when compared to claim 1. *Id.* But, collateral estoppel only applies when an issue of patentability is "identical to one decided in the first action." Ironburg thus argues that if "arguing new art is necessary, the claims are patentably distinct." *Id.* We understand Ironburg's position to be that if arguing new art is necessary to arguing unpatentability, then the differences between the challenged dependent claims and claim 1 are material and collateral estoppel cannot preclude a finding that the challenged claims are patentably distinct. Ironburg also argues that Valve cannot rely upon "new" prior art without running afoul of the requirements in 35 U.S.C. § 312(a)(3) that Valve's Petition must set out the full grounds on which each claim is unpatentable. *Id.* at 6 (citing *Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1336 (Fed. Cir. 2020) (holding it is error to institute an IPR based on combination not advanced in petition); *SAS Inst., Inc. v. Iancu*, 584 U.S. 357, 369 (2018) ("the petition [is] the centerpiece of the proceeding both before and after institution")). Under the circumstances here, we find that Ironburg persuasively argues that Valve may not rely upon "new" prior art when addressing the issue of whether the challenged dependent claims are

patentably distinct from claim 1 under a theory of collateral estoppel. *See* Ironburg Remand Reply 1–10.

We find, however, that Ironburg's arguments do not address Valve's contentions that Burns, the primary reference that Valve relies upon in the Petition as demonstrating that the challenged claims are obvious, describes each feature introduced in the challenged dependent claims. Valve has relied upon Burns for this purpose from the outset of this proceeding to teach the additional limitations of claims 18, 19, 21, 26, and 29. For the reasons expressed below, we agree with Valve's contentions that Burns describes each limitation introduced in the challenged dependent clams.

1. Claims 18 and 19

Claims 18 and 19 each depend directly from claim 1 and introduce requirements for the thickness of the elongated members on the underside of the controller as follows:

> 18. The games controller of claim 1 wherein the first elongate member is formed from material having a thickness less than 5 mm.
>
> 19. The games controller of claim 1 wherein the first elongate member is formed from material having a thickness between 1 mm and 3 mm.

Ex. 1001, 10:65–11:3. In IPR2016-00948, in which we addressed similar claim limitations in a related patent, U.S. Patent 8,641,525 (Ex. 1038, the "'525 patent"),[12] we found that "thickness" as used in claims such as claims 18 and 19 refers to "the dimension of the elongate member perpendicular to

[12] Claims 10 and 11 of the '525 patent contain the limitations directed to the thickness of the elongate member that substantially parallel the limitations introduced in claims 18 and 19 respectively. *Compare* Ex. 1038, 5:13–16, *with* Ex. 1001, 10:65–11:3.

the surface of the elongate member (i.e., also the direction of displacement when the user activates the control function)." Ex. 1058, 10–11; Ex. 1055, 13; Ex. 1056. We interpret "thickness" the same way in this proceeding.[13]

Valve contends that claims 18 and 19 are not patentably distinct from claim 1 because Burns describes elongated members of about 1.8 mm thick, which falls within both ranges of thickness recited in claims 18 ("less than 5 mm") and 19 ("between 1 mm and 3 mm"). Valve relies upon an analysis of photographs found in Burns by Dr. Rempel as evidence of the thickness of Burns's elongated member. Valve Remand Br. 7 (citing Ex. 1019[14] ¶¶ 18–20; Ex. 1077 ¶¶ 135–137; Ex. 1004, 2; Ex. 1065, 1–2).

Ironburg does not contest Valve's showing that because Burns describes elongate members having a thickness within the ranges recited in claims 18 and 19, those claims are not patentably distinct from claim 1. Ironburg Remand Br. 16–17. We find that Valve has proven by a preponderance of evidence that Burns describes elongate members that are about 1.8 mm thick. We also conclude that Burns's disclosure of such elongate members demonstrates that claims 18 and 19 are not patentably distinct from claim 1. Accordingly, we conclude that claims 18 and 19 are not patentable.

2. Claim 21

Claim 21 depends directly from claim 1 and further recites: "The games controller of claim 1 comprising two of the first elongate members, wherein the two first elongate members converge towards the front end of

[13] Ironburg does not argue that this interpretation is incorrect.

[14] The Federal Circuit held that it was error for us not to consider Dr. Rempel's testimony proffered in Exhibit 1019. *Valve II* at 16.

the case with respect to one another." Ex. 1001, 11:7–10. In IPR2016-00948, we construed this limitation as requiring "the elongate members to converge towards each other either towards the top of the controller or towards the bottom, but [] does not require each elongate member to converge only towards the front of the controller." Ex.1055, at 35; Ex.1056.

Among other reasons, Valve argues that Burns describes two converging elongate members as introduced in claim 21. Valve Remand Br. 11–12. Valve relies on the annotated version of one of the photographs appearing in Burns that we reproduce at right. *Id.* at 12 (citing Pet. 29; Ex. 1004, 2; Ex. 1077 ¶ 153).

Ironburg does not contest Valve's showing about the significance of Burns's description of converging elongate members on this Remand or in the original trial. *See* Ironburg Remand Br. 17–18; *see also* PO Supp. Resp. 19–26 (arguing only claims 18, 19 and 29). We find that Valve has proven by a preponderance of evidence that Burns describes the converging pair of elongate members introduced in claim 21. We also conclude that Burns's disclosure of such elongate members demonstrates that claim 21 is not patentably distinct from claim 1. Accordingly, we conclude that claim 21 is not patentable.

3. Claim 26

Claim 26 depends directly from claim 1 and further recites: "The games controller of claim 1 wherein the first additional control is a paddle lever." Ex. 1001, 11:29–30. We have construed "paddle lever" in this

proceeding as requiring a structure that "must [] be long enough to accommodate the user's middle, ring, or little fingers and flexible enough so that its unsecured end may be displaced to actuate a control function," where this "flexible enough" requirement refers to the ability of the paddle lever to be sufficiently displaced to actuate the control function. Dec. 10–15.

Valve argues that Burns describes the "paddle lever" introduced in claim 26. Valve Remand Br. 15 (citing Pet. 40; Ex. 1009 ¶ 24; Ex. 1007 ¶¶ 169–170). Burns expressly refers to its elongate members on the bottom of its controller as "paddles" and describes them as "screwed and bonded into the chassis on the controller." Ex. 1004, 2. Burns depicts its paddles in the image reproduced at right. Dr. Rempel testified that these "paddles" in Burns "are depicted as separate cantilevered components, nonintegral with the case and attached to the case by fasteners at a supported end." Ex. 1009 ¶ 24.

Ironburg does not contest Valve's showing about the significance of Burns's description of paddle levers on this Remand or in the original trial. *See* Ironburg Remand Br. 18–19; *see also* PO Supp. Resp. 19–26 (arguing only claims 18, 19 and 29). We find that Valve has proven by a preponderance of evidence that Burns describes the paddle levers introduced in claim 26. We also conclude that Burns's disclosure of such paddle levers demonstrates that claim 26 is not patentably distinct from claim 1. Accordingly, we conclude that claim 26 is not patentable.

4. Claim 29

Claim 29 depends directly from claim 1 and further recites: "The games controller of claim 1 wherein the first elongate member is inherently resilient and flexible so as to be sufficiently displaceable to active the control function." Ex. 1001, 12:6–8. In this proceeding, we have construed this limitation as referring to "inherent characteristics of the elongate member itself rather than components assembled to form the 'first additional control.'" Dec. 17–18. The Federal Circuit did not alter this interpretation in *Valve I*. *Valve I* at 1376.

Valve argues that Burns describes the "inherently resilient and flexible" feature introduced in claim 29. Valve Remand Br. 19 (citing Supp. Reply 14–19; Ex. 1009 ¶ 27–38; Ex. 1009 ¶¶ 25, 31; Ex. 1004, 2). Burns expressly describes its two bottom paddles as being "buttons" that can be configured to perform in-game actions like jumping and crouching. Ex. 1004, 2. Dr. Rempel testifies that an ordinarily skilled artisan would have understood Burns's paddles to have been inherently resilient by returning to their original position after being depressed and flexible enough to have been capable of being depressed. *Id*. (citing Ex. 1009 ¶¶ 25, 27–38; Ex. 1077 ¶ 185). The cantilevered nature of the mounting of the paddles, being secured at only one end, further supports an ordinarily skilled artisan's understanding of the inherently resilient and flexible nature of Burns's paddles. *Id*.

Ironburg does not contest Valve's showing about the significance of Burns's description of its paddle levers on this Remand. *See* Ironburg Remand Br. 19. We find that Valve has proven by a preponderance of evidence that Burns describes the inherently resilient and flexible elongate

members introduced in claim 29. We also conclude that Burns's disclosure of such paddle levers demonstrates that claim 29 is not patentably distinct from claim 1. Accordingly, we conclude that claim 29 is not patentable.

E. Claims 18, 19, 21, 26, and 29:
Obviousness over Burns in View of LaCelle

On remand, we address Valve's arguments that certain claims among dependent claims 18, 19, 21, 26, and 29 are unpatentable as obvious over Burns in view of LaCelle. *See* Pet. 32–40 (addressing claims 1, 18, 19, 21, 26, and 29 in view of Burns and LaCelle). Burns is an article reviewing a game controller that incorporates technology licensed from Ironburg. Prelim. Resp. 26 (citing Ex. 2003, 54).

1. Motivation to Combine Teachings of Burns and LaCelle

The Federal Circuit held that our prior finding that Valve had failed to demonstrate a sufficient motive to combine teachings of Burns and LaCelle was not supported by substantial evidence. *Valve II* at 12. The Federal Circuit identified three factual issues that bear on the motivation to combine Burns and LaCelle but we did not previously address. They are:

> 1. Whether LaCelle discloses controls on the back of a games controller, *id*. at 14–15;
> 2. Whether LaCelle teaches that the features on the back of its games controller are curved, *id*. at 15; and
> 3. Whether Valve's Supplemental Reply argument to establish a motive to combine the teachings of Burns and LaCelle as supported by Dr. Rempel's Supplemental Reply Declaration (Ex. 1019) is persuasive, *id*. at 16–18.

The first two factual issues are closely linked because they both relate to the nature of two items shown in LaCelle's figures that Valve contends to be controls with curved surfaces. These items are colorized yellow in the pertinent portions of LaCelle's Figs. 1, 3, 6, and 7, that we reproduce at right. All of LaCelle's figures depict a game controller. Ex. 1005, code (57). Figure 7 is a "bottom plan view" and the alleged controls are highlighted in yellow. *Id.* at p. 1. Figure 1 is a portion of a "perspective view of a game controller." *Id.* Figure 3 is a portion of a "front elevational view." *Id.* Figure 6 is a portion of a "rear elevational view." *Id.*

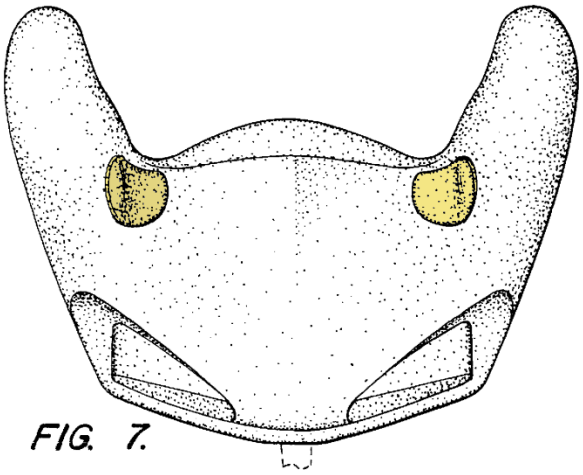


FIG. 7.

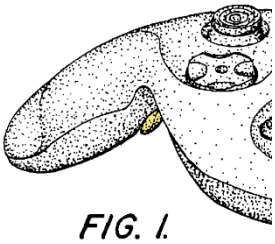


FIG. 1.

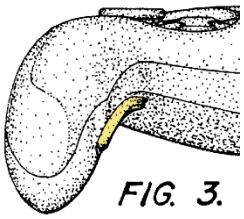


FIG. 3.

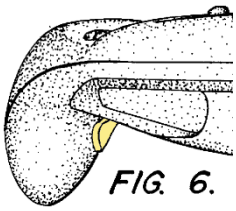
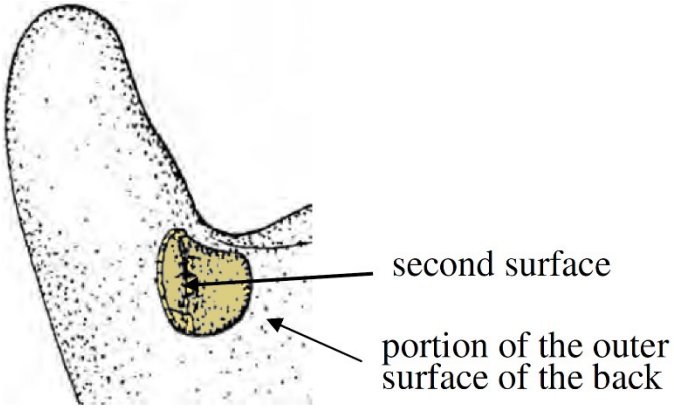


FIG. 6.

Valve contends that Figure 7 demonstrates that an ordinarily skilled artisan would have understood LaCelle to describe a surface that is "non-parallel with a portion of the outer surface of the back of the case to which it is mounted." Valve Remand Br. 23 (citing Pet. 44 (citing Ex. 1005, Fig. 7; Ex. 1009 ¶ 29). These conclusions about the substance of LaCelle's Figure 7 are reflected in the textual annotations provided by Dr. Rempel shown in the figure from his original Declaration that is reproduced at



right, and which we have further annotated by hightlighting the second surface in yellow. Ex. 1009 ¶ 29.

Valve contends that, in its original challenge to claim 1, Valve relied on LaCelle only for its teaching of the last phrase in the claim, which recites: "the first elongate member comprises a second surface opposing the first surface, the second surface being configured and arranged to be non-parallel with a portion of the outer surface of the back of the case to which the first elongate member is mounted." Valve Remand Br. 22 (citing Pet. 44; *Valve II* at 13). Valve contends that the surface of LaCelle's highlighted structures are "non-parallel" as recited in claim 1 because those surfaces are curved. *Id*. at 22–23. Valve argues that regardless of whether LaCelle's highlighted structures are "controls," their curved nature "directly supports two of [Valve's] proffered motivations to combine," namely:

> a) that LaCelle advantageously suggests an alternative rear control geometry for Burns, e.g. to give the distal ends of the back paddles of Burns the curved (i.e. "non-parallel") outer shape of the back features or buttons of LaCelle, and b) that changing the outer shape of the distal ends of the Burns' elongate members (e.g. to have the curved outer shape of the back buttons of LaCelle) would have been expected to be readily practical and successful in this simple and predictable art, and the results would not have been unexpected.

Id. at 23–24 (citing Pet. 32 (citing Ex. 1009 ¶ 27)).

Regarding the first and second fact issues, Ironburg contests only the first, namely, whether LaCelle's structures are "controls." Ironburg argues that, as a design patent, LaCelle discloses aesthetic features rather than functional features. Ironburg Remand Br. 20–21. Ironburg also emphasizes that we previously found that LaCelle does not "verbally describe[] individual elements of its controller or the function of any portion of the

controller[] illustrated in [its] figures." *Id*. at 21 (quoting Remand Dec. 13). Although we did make note of LaCelle's lack of "verbal description," we did not take a position on whether LaCelle otherwise described a control on the underside of its controller.

On the first issue, we find that LaCelle's underside items would have been understood by an ordinarily skilled artisan as a "control." LaCelle describes the article illustrated in all its figures as a "game controller." Ex. 1005, code (57). Dr. Rempel testifies that even if an ordinarily skilled artisan "were not 100% certain that the identified features on the back of the . . . LaCelle . . . controller[] are functional controls, their location and appearance certainly suggests functional back controls to one of ordinary skill in the art (even if another interpretation were also possible)." Ex. 1019 ¶ 12. The Federal Circuit has instructed us that we erred by failing to consider Dr. Rempel's testimony supporting Valve's Supplement Reply. *Valve II*, at 16. Dr. Rempel's testimony is consistent with the manner in which LaCelle graphically depicts the items on the underside of its game controller, and we credit that testimony as being persuasive. Additionally, as we explain below, we do not find that Valve must prove that LaCelle describes its underside items as a control to support its position that an ordinarily skilled artisan would have been motivated to apply the curved shape of LaCelle's underside items to the surface of Burns's elongate members.

On the second issue, we find that LaCelle undisputedly describes its items on the underside of the controller as being curved.

On the third issue, the probative value of Valve's Supplemental Reply argument and supporting evidence, the Federal Circuit held that we ignored

important testimony establishing that an ordinarily skilled artisan "'*would* have combined LaCelle and Burns' and 'would recognize that the predictable result of the combination — a back paddle having an end that is curved like that of LaCelle — could have better coupling with the user's finger.'" *Id*., at 17–18 (quoting Ex. 1019 ¶ 39 with added emphasis). The Federal Circuit also refocused our obviousness inquiry on "whether a person of ordinary skill in the art would have been motivated to combine Burns and LaCelle, not whether the combination would with absolute certainty result in the desired outcome." *Id*. at 18. Dr. Rempel's testimony cited by the Federal Circuit establishes that an ordinarily skilled artisan would have been motivated to apply the curved shape of LaCelle's underside items to Burns's elongate members. Our original Remand Decision failed to consider that testimony, and the Federal Circuit has identified that failure as error. *Valve II*, at 17. The argument proffered by Ironburg to rebut Dr. Rempel's testimony is not supported by evidence. *See* Ironburg Remand Br. 23–24 (citing our Remand Decision but failing to cite evidence in support of Ironburg's proffered argument).

2. Whether the Combined Teachings of Burns and LaCelle Describe All Elements of Claims 18, 19, 21, 26, and 29

Valve argues that it is "undisputed that all elements of base claim 1 are taught by the combination of Burns in view of LaCelle." Valve Remand Br. 21 (citing Pet. 33–38; Ex. 1009 ¶¶ 23–25, 27–29). Ironburg disagrees, responding that "neither Burns nor LaCelle discloses the first control with an elongate member having a second surface arranged to be non-parallel with the back, outer surface of case." Ironburg Remand Br. 20. Ironburg's argument appears to rest on the issue of whether LaCelle describes its underside items as a control. We have already found that LaCelle's

underside items are controls as explained above. However, even if LaCelle did not disclose that its underside items were controls, Valve relies upon Burns as describing this aspect of claim 1. Valve Supp. Reply 9–10. Either way, Valve persuades us that the Burns and LaCelle, when combined as Valve suggests, teach every element of claim 1.

In Parts II.D.1–4 above, we have also analyzed the parties' arguments and supporting evidence on the issues of whether Burns describes the limitations introduced in each of claims 18, 19, 21, 26, and 29. For the reasons expressed above, Valve persuades us that Burns and LaCelle, when combined as Valve suggests, teach every element of dependent claims 18, 19, 21, 26, and 29. We have already concluded that Valve has proven that an ordinarily skilled artisan would have been motivated to combine teachings of Burns and LaCelle to arrive at the invention of claim 1, and those motivations also suffice for dependent claims 18, 19, 21, 26, and 29, all of which introduce limitations that we find to be described by Burns. Accordingly, we find that Valve has proven by a preponderance of evidence that the combined teachings of Burns and LaCelle render claims 18, 19, 21, 26, and 29 unpatentable as obvious.

III. CONCLUSION

For all the reasons set forth above, we conclude that Valve has proven by a preponderance of evidence that claims 18, 19, 21, 26, and 29 of the '688 patent are unpatentable.

In summary,

Claim(s)	35 U.S.C. §	Basis/ Reference(s)	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
18, 19, 21, 26, 29	103	Burns, LaCelle	18, 19, 21, 26, 29	

IV. ORDER

For the reasons given, it is:

ORDERED that claims 18, 19, 21, 26, and 29 of U.S. Patent No. 9,289,688 B2 have been shown to be unpatentable; and

FURTHER ORDERED because this is a final written decision, the parties to this proceeding seeking judicial review of our Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

PETITIONER:

Patrick A. Lujin
Jason R. Mudd
SHOOK, HARDY & BACON L.L.P.
plujin@shb.com
jmudd@shb.com

PATENT OWNER:

Jordan L. Stott
Gregory Tamkin (*pro hac vice*)
DORSEY & WHITNEY LLP
stott.jordan@dorsey.com
tamkin.greg@dorsey.com