

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Collective Minds Gaming Co. Ltd.  
Petitioner

v.

Ironburg Inventions Ltd.  
Patent Owner

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Case No. TBD

Patent 8,641,525

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**PETITION FOR *INTER PARTES* REVIEW  
OF U.S. PATENT 8,641,525**

## TABLE OF CONTENTS

<b>I.</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>II.</b>	<b>'525 PATENT PROSECUTION AND PRIORITY DATE.....</b>	<b>2</b>
A.	SUMMARY OF THE PROSECUTION HISTORY OF THE '525 PATENT .....	2
B.	THE EARLIEST POSSIBLE PRIORITY DATE FOR THE CHALLENGED CLAIMS .....	5
<b>III.</b>	<b>REQUIREMENTS FOR INTER PARTES REVIEW UNDER 37 C.F.R. § 42.104 .....</b>	<b>5</b>
A.	GROUNDS FOR STANDING UNDER 37 C.F.R. § 42.104(A).....	5
B.	IDENTIFICATION OF CHALLENGE UNDER 37 C.F.R. § 42.104(B) AND RELIEF REQUESTED.....	5
C.	LEVEL OF SKILL OF A PERSON HAVING ORDINARY SKILL IN THE ART .....	6
D.	CLAIM CONSTRUCTION UNDER 37 C.F.R. § 42.104(B)(3) .....	7
<b>IV.</b>	<b>THERE IS A REASONABLE LIKELIHOOD THAT THE CHALLENGED CLAIMS OF THE '525 PATENT ARE UNPATENTABLE .....</b>	<b>9</b>
A.	<u>GROUND 1</u> : CLAIMS 1-3, 5, 6, 9-11, 14, 17-18, AND 20 OF THE '525 PATENT ARE OBVIOUS UNDER KOTKIN IN VIEW OF THE KNOWLEDGE OF A PERSON OF ORDINARY SKILL IN THE ART.....	9
B.	<u>GROUND 2</u> : CLAIMS 1, 2, 4-11, 13-17, AND 19-20 OF THE '525 PATENT ARE OBVIOUS UNDER WILLNER IN VIEW OF KOJI AND IN FURTHER VIEW OF RAYMOND .....	44
<b>V.</b>	<b>MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(A)(1) .....</b>	<b>78</b>
A.	REAL PARTY-IN-INTEREST .....	78
B.	RELATED MATTERS.....	78
C.	LEAD AND BACK-UP COUNSEL UNDER 37 C.F.R. § 42.8(B)(3-4).....	79
D.	PAYMENT OF FEES UNDER 37 C.F.R. § 42.103 .....	79
	THE UNDERSIGNED SUBMITTED PAYMENT BY DEPOSIT ACCOUNT WITH THE FILING OF THIS PETITION AUTHORIZING THE OFFICE TO CHARGE FEES REQUIRED UNDER 37 C.F.R.§ 42.103(A) AND 42.15(A). .....	79
<b>VI.</b>	<b>CONCLUSION .....</b>	<b>79</b>

## I. INTRODUCTION

Petitioner Collective Minds Gaming Co. Ltd. (“Petitioner”) respectfully requests an *Inter Partes* Review (“IPR”) of claims 1-11 and 13-20 (collectively, the “Challenged Claims”) of U.S. Patent 8,641,525 (“the ’525 Patent”), titled “Controller For Video Game Console.” The ’525 Patent is broadly directed to modern video game controllers such as the following illustration, which is applicant admitted prior art:

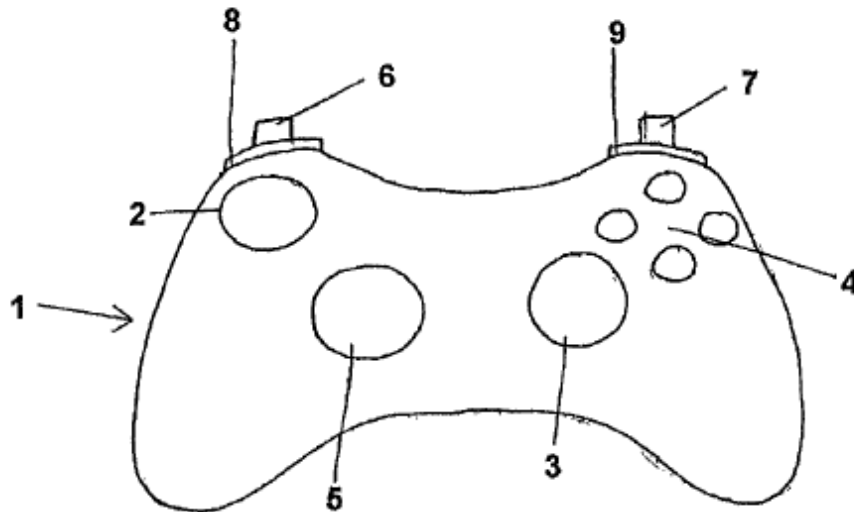


Figure 1

**Ex. 1001**, ’525 Patent at FIG. 1. The ’525 Patent’s alleged point of novelty is simply adding multiple elongate controls on the underside capable of being operated by a user’s middle fingers. *Id.* at 1:6-58. The following figures illustrate these back controls:

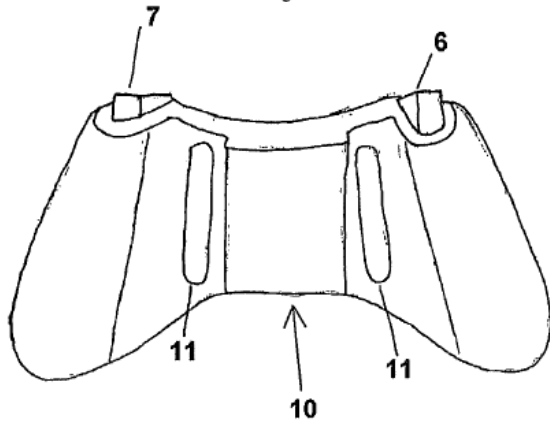


Figure 2

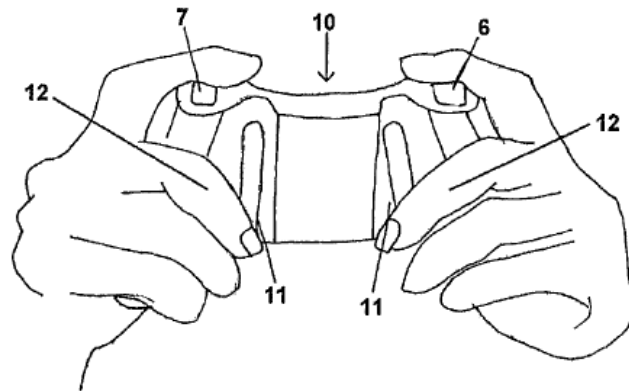


Figure 3

As demonstrated by Petitioner below, the alleged point of novelty, i.e., adding back controls operable by a user's middle fingers, was present in the prior art.

## II. '525 PATENT PROSECUTION AND PRIORITY DATE

### A. Summary of the Prosecution History of the '525 Patent

The '525 Patent resulted from U.S. Patent Application No. 13/162,727 ("the '727 Application"), filed on June 17, 2011. **Ex. 1001**, '525 Patent at (21-22). Claims 1-7, 11, 13-14, and 17-20 were initially rejected as anticipated by U.S. Patent No. 6,394,906 to Ogata ("Ogata"). **Ex. 1002**, '525 Patent File History, at Office Action dated 06/28/2012 at 40. Further, claims 8-10, 12, and 15-16 were rejected as obvious over Ogata. *Id.* at 43. Applicant filed a Response on October 29, 2012, amending claims 1-2, 4, and 6-20, cancelling claims 3 and 5, and adding new claims 21-22. *Id.*, at Office Action Response dated 10/29/2012 at 62. Applicant's amendments to independent claim 1 replaced the "one or more back

controls” with “a back control . . . is an elongate member that extends between the top edge and the bottom edge and is inherently resilient and flexible.” *Id.* at 58.

Claim 22 was then rejected as anticipated by U.S. Patent No. 7,859,514 to Park (“Park”). *Id.*, at Office Action dated 02/04/2013 at 82. Claims 1-2, 4, and 6-21 were also rejected as obvious over Park, in view of U.S. Patent Publication No. 2004/0224765 to Martinez et al. (“Martinez”). *Id.* at 84. The Applicant and the Examiner then held a telephone interview on April 25, 2013 to discuss the Applicant’s proposed amendments in response to the Final Office Action. *Id.*, at Applicant-Initiated Interview Summary at 116. The Examiner also notified the Applicant that he had located an additional reference disclosing the invention disclosed by the claims. *Id.*

Applicant filed a Response on May 6, 2013, amending claims 1, 4, 6-20, and 22. *Id.*, at Office Action Response dated 05/06/2013, at 110. Applicant’s amendment to Claim 1 replaced the “back control . . . is an elongate member” limitation with “a first back control and a second back control, each back control being located on the back of the controller and each back control including an elongate member that extends substantially the full distance between the top edge and the bottom edge and is inherently resilient and flexible.” *Id.* at 106. The Patent Office then issued an Advisory Action stating that the proposed amendments

Petition for *Inter Partes* Review of U.S. Patent 8,641,525

would not be entered because they raised new issues that would require further searching. *Id.*, at Advisory Action dated 05/15/2013 at 118.

On August 5, 2013, the Applicant filed a Request for Continued Examination and a Response to the Final Office Action and Advisory Action. *Id.* at Office Action Response dated 08/05/2013 at 121. As part of the response, Applicant resubmitted his claim amendments from the prior Advisory Action. *Id.*

On August 9, 2013, the Examiner issued a non-final Office Action, rejecting claims 1-2, 4, 6-7, 11-12, and 15-22 as anticipated by “Review: Scuf Xbox 360 Controller” by Dave Burns (“Burns”). *Id.* at Office Action dated 08/09/2013. The Examiner also rejected claims 8-10 as being obvious over Burns, claims 13-14 as being obvious in view of Burns in view of 5,551,693 to Goto (“Goto”). *Id.* at 158-159.

In response to the non-final Office Action, the inventor, Simon Burgess, submitted a declaration stating that he was the inventor of the subject matter disclosed in the Burns reference. *Id.*, at Office Action Response dated 10/14/2013 at 179-180. The Applicant further argued in response that without Burns, the rejection is overcome. *Id.* at 175-176.

A Notice of Allowance followed on November 18, 2013 (*id.* at 184) and the '525 Patent issued on February 4, 2014 (**Ex. 1001**, '525 *Patent* at (45)).

**B. The Earliest Possible Priority Date for the Challenged Claims**

For the purposes of this IPR, it is assumed that the Challenged Claims are entitled to a June 17, 2011 priority—the filing date for the '727 Application.

**III. REQUIREMENTS FOR INTER PARTES REVIEW UNDER 37 C.F.R. § 42.104**

**A. Grounds for Standing Under 37 C.F.R. § 42.104(a)**

Petitioner certifies that the '525 Patent is available for IPR and that the Petitioner is not barred or estopped from requesting IPR challenging the claims of the '525 Patent. Specifically, Petitioner states: (1) Petitioner is not the owner of the '525 Patent; (2) Petitioner has not filed a civil action challenging the validity of any claim of the '525 Patent; and (3) this Petition is not filed one year or more after Petitioner was served with a complaint alleging infringement of the '525 Patent.

**B. Identification of Challenge Under 37 C.F.R. § 42.104(b) and Relief Requested**

In view of the prior art, evidence, and claim charts, Claims 1-11 and 13-20 of the '525 patent are unpatentable and should be cancelled. 37 C.F.R. § 42.104(b)(1).

**i. The Grounds for Challenge**

Based on the prior art references identified below, IPR of the Challenged Claims should be granted. 37 C.F.R. § 42.104(b)(2).

Ground	Proposed Statutory Rejections for the '387 Patent	Reference Exhibit No.
1	Claims 1-3, 5-11, 13, 14, 17-18, and 20 are <b>obvious</b> under U.S. Patent Publication No. 2010/0298053 to Kotkin (“Kotkin”) in view of the knowledge of a person of skill in the art.	<b>1003,</b> <b>1004</b>
2	Claims 1-11, 13-17, and 19-20 are <b>obvious</b> under U.S. Patent No. 6,760,013 to Michael A. Willner, et al. (“ <i>Willner</i> ”) in view of Japanese Patent Publication JPH1020951 to Tsuchiya Koji (“ <i>Koji</i> ”), in further view of U.S. Patent No. 5,773,769 to Christopher W. Raymond (“ <i>Raymond</i> ”).	<b>1005,</b> <b>1006,</b> <b>1007</b>

Section IV identifies where each element of the Challenged Claims is found in the prior art. 37 C.F.R. § 42.104(b)(4). The exhibit numbers of the supporting evidence relied upon to support the challenges are provided above and the relevance of the evidence to the challenges raised are provided in Section IV. 37 C.F.R. § 42.104(b)(5). **Exhibits EX1001 – EX1013** are also attached.

**C. Level of Skill of a Person Having Ordinary Skill in the Art**

A person of ordinary skill in the art of the '525 Patent at the time of the claimed invention would have the equivalent of a bachelor’s degree in mechanical engineering or a similar discipline, with at least 2 years of experience with product design or the equivalent. Additional industry experience or technical training may offset less formal education, while advanced degrees or additional formal education may offset lesser levels of industry experience. **Ex. 1008**, *Benden Decl.* at ¶8.



**D. Claim construction under 37 C.F.R. § 42.104(b)(3)**

In this proceeding, claim terms of an unexpired patent should be given their “broadest reasonable construction in light of the specification.” 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144-46 (2016). With the single exception discussed below, Petitioner proposes as the broadest reasonable construction, for purposes of IPR only, that the claim terms of the ’525 Patent be given their ordinary and customary meaning that the term would have to one of ordinary skill in the art.

**i. Converging paddles**

Claim 13 recites “the elongate members converge towards the front end of the controller with respect to one another.” The ’525 Patent provides little detail regarding the meaning of this phrase. Beyond repeating the claim language, only the figures and the following excerpt describe any paddle convergence:

In one embodiment the paddles are orientated parallel with each other.

In an alternative embodiment **the paddles are orientated such that they converge towards the top edge with respect to each other.**

**Ex. 1001**, ’525 Patent at 3:53-56 (emphasis added). This concept is illustrated most clearly in the following FIG 2:

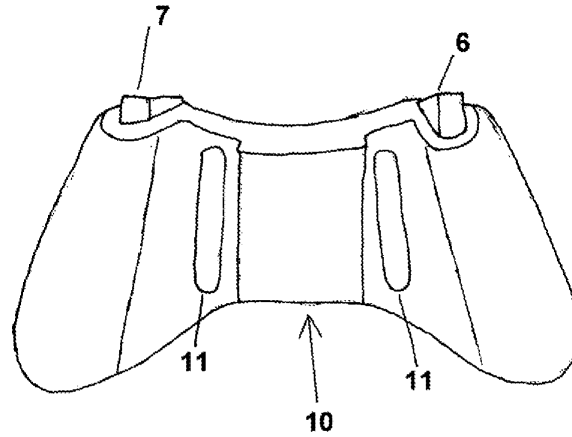


Figure 2

As illustrated in FIG. 2 and as described in the excerpt above, the paddles converge toward each other as the paddles near the “top edge” of the controller. Curiously, Claim 13 states that the paddles converge with respect to each other toward the “front end” of the controller. Although this language, on its face, appears somewhat inconsistent with the intrinsic record, Petitioner proposes that Claim 13 should be construed under the Broadest Reasonable Interpretation (“BRI”) standard to at least capture the sole express embodiment in the ’525 Patent. Namely, it should capture paddles that converge toward one another as they approach the top edge of the controller as depicted above in FIG. 2.

**IV. THERE IS A REASONABLE LIKELIHOOD THAT THE CHALLENGED CLAIMS OF THE '525 PATENT ARE UNPATENTABLE**

**A. Ground 1: Claims 1-3, 5-11, 13, 14, 17-18, and 20 of the '525 Patent are Obvious Under Kotkin in View of the Knowledge of a Person of Ordinary Skill in the Art**

**i. *Kotkin***

U.S. Patent Publication No. 2010/0298053 to David Kotkin ("*Kotkin*") was published on November 25, 2010 and claims priority to U.S. Provisional Patent Application No. 61/179,551 ("the '551 Provisional"), which was filed on May 19, 2009 and was incorporated by reference in its entirety in *Kotkin*. **Ex. 1003**, *Kotkin* at (10), (60), [0001]. Because it published as an application under 35 U.S.C. § 122(b), *Kotkin* is prior art to the '525 Patent under pre-AIA 35 U.S.C. § 102(e)(1). Additionally, to the extent Patent Owner attempts a swear behind, *Kotkin* is entitled to a priority date of May 19, 2009. As detailed in **Ex. 1012**, because the '551 Provisional provides 35 U.S.C. § 112, ¶ 1 support for the claims of *Kotkin*, *Kotkin* is entitled to the '551 Provisional filing date of May 19, 2009. *Dynamic Drinkware, LLC v. National Graphics, Inc.*, 800 F.3d 1375, 1378 ("[T]he specification of the *provisional* must 'contain a written description of the invention and the manner and process of making and using it, in such full, clear, concise, and exact terms,' 35 U.S.C. § 112 ¶ 1, to enable an ordinarily skilled artisan to practice the invention *claimed* in the *non-provisional* application.") (quoting *New Railhead*

*Mfg., L.L.C. v. Vermeer Mfg. Co.*, 298 F.3d 1290, 1294 (Fed. Cir. 2002)); *see also* **IPR2014-01093**, *Paper 69*, Final Written Decision at 16 (concluding *Dynamic Drinkware* applies equally to issued patents, qualifying as prior art under 102(e)(2), and to published patent applications, qualifying as prior art under 102(e)(1)). Further, as detailed below, the relevant teachings in *Kotkin* that render obvious the Challenged Claims were present in the '551 Provisional. *In re Giacomini*, 612 F.3d 1380, 1383 (Fed. Cir. 2010) (“[A]n applicant is not entitled to a patent if another’s patent discloses the same invention, which was carried forward from an earlier U.S. provisional application or U.S. non-provisional application.”). *Kotkin* was not considered during prosecution.

*Kotkin* and the '551 Provisional teach the addition of elongate members to the back of a standard video game controller and are within the same field of endeavor and are reasonably pertinent to the problem associated with the '525 Patent. *See Ex. 1008, Benden Decl.* at ¶18. Specifically, *Kotkin* discloses the use of a “skin,” which encloses a standard video game controller, adding additional controls on both the front face and back of the controller. *See Ex. 1003, Kotkin* at [0029]-[0030].

*Kotkin* discloses two embodiments for the arrangement of the back controls through the use of elongate members. In the first embodiment, the back of the housing includes a flexible plate, both sides of which engage top-mounted trigger

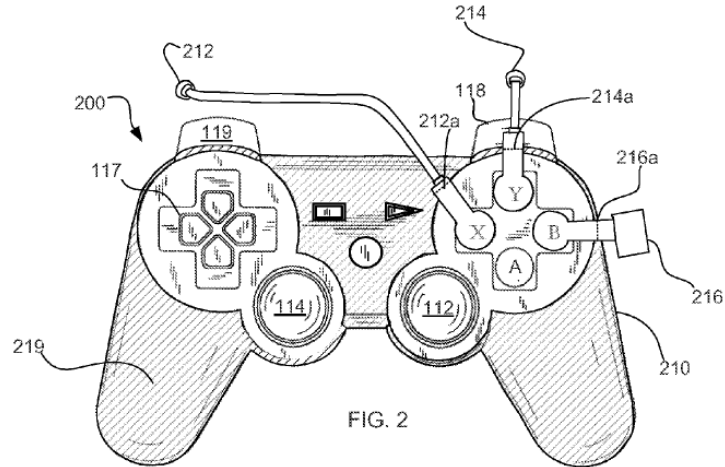
controls when squeezed. *See id.* at [0043], FIG. 5. In the second embodiment, Kotkin discloses a flexible line or cable, which is attached to the top-mounted trigger and runs along the controller handles, terminating at the tips of the handles. *See id.* at [0033], FIG. 3. The '551 *Provisional* teaches a similar arrangement to the second embodiment disclosed by *Kotkin*. *See Ex. 1004*, '551 *Provisional* at FIGs. A-J. However, the '551 *Provisional* teaches that there are two elongate members, rather than just one and that these elongate members form part of the housing, rather than attaching in another manner. *See id.*

A person of skill in the art would look to all types of control configurations when designing a controller, including *Kotkin*. Therefore, it would have been obvious to modify *Kotkin* in light of the knowledge of a person of ordinary skill in the art to arrive at the claimed invention of the '525 Patent. *See id.* at ¶¶17, 25.

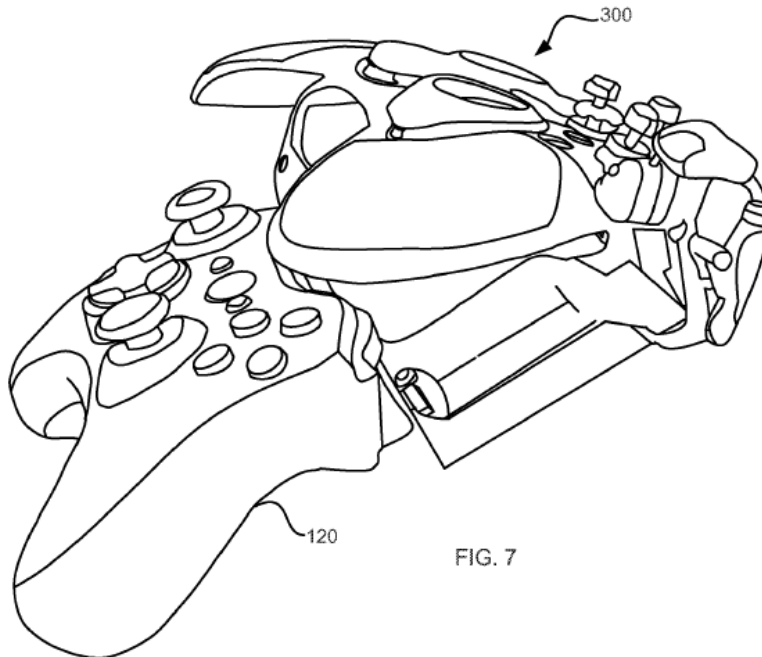
**ii. Claim 1**

***[1.pre] A hand held controller for a game console comprising:***

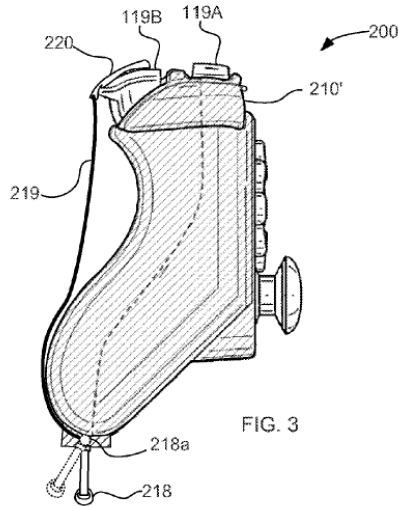
*Kotkin* discloses a hand held controller for a game console. *See, e.g., Ex. 1003*, *Kotkin* at Abstract (teaching “[a] device for enhancing operation of a game controller”); *see also id.* at FIG. 2:



Specifically, like the '525 Patent, *Kotkin* teaches adding controls to a standard video game controller. One embodiment disclosed in *Kotkin*, as depicted in the following figure, is a shell (300) mounted on a prior art video game controller (120) that provides additional means to actuate preexisting controls:



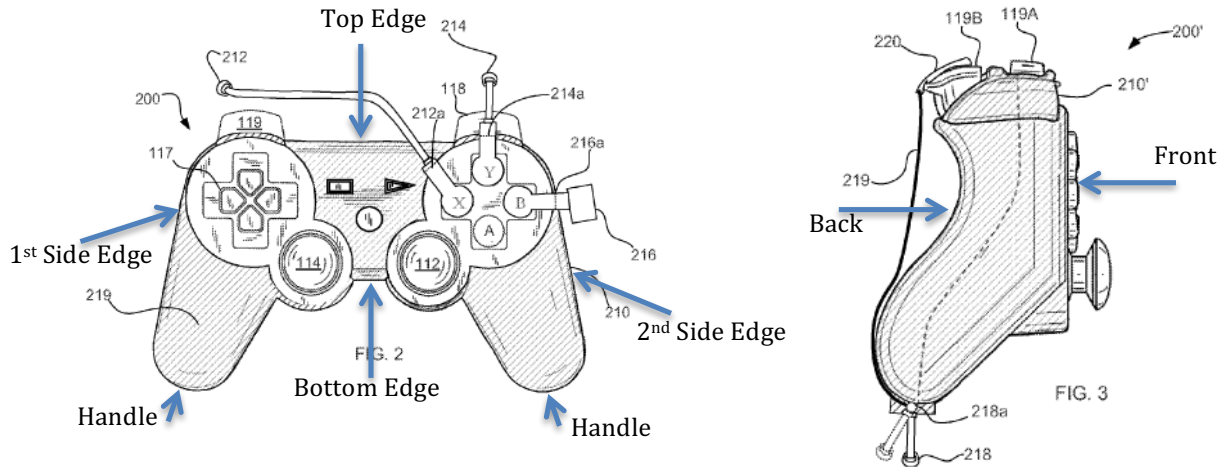
One such means of actuating controls, as depicted in the following FIG. 3, are elongated members stretching along the length of the back of the controller and allowing a user to actuate the front-mounted triggers using a middle finger:



The '551 Provisional similarly teaches adding controls to a standard video game controller. *See, e.g., Ex. 1004, '551 Provisional* at [0002], [0004], FIGs 1-14.

***[1.a] an outer case comprising a front, a back, a top edge, and a bottom edge, wherein the back of the controller is opposite the front of the controller and the top edge is opposite the bottom edge; and***

Like the '525 Patent, *Kotkin* is based on standard video game controllers, which include opposing front and back faces, opposing top and bottom edges, and handles adjacent the side edges. The following annotated figures from *Kotkin* label each of these claimed features:



The '551 Provisional is also based on a standard video game controller and includes the same structural components noted above. *See, e.g., Ex. 1004, '551 Provisional* at FIGs 1-14. Further, the shell (**300**) described above would also be considered an outer case when installed on the controller.

**[1.b] a front control located on the front of the controller;**

*Kotkin* discloses a front control located on the front of the controller. *See, e.g., Ex. 1003, Kotkin* at [0028] (teaching “on the controllers **100, 120**, it is intended that the user’s right thumb actuate, among other things, each of the four buttons **116, 126** (typically labeled ‘X’, ‘Y’, ‘A’, and ‘B’) and the right-side thumb stick **112, 122**.”); *see also id.* at FIG. 2:



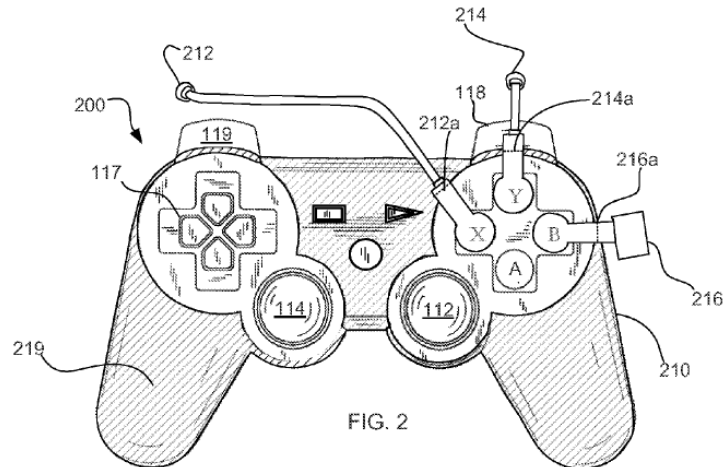


FIG. 2

The '551 Provisional also discloses a front control located on the front of the controller. **Ex. 1004**, '551 Provisional at FIGs. 1-9, 12-14, A-E, I, L, M, and O.

**[1.c] wherein the controller is shaped to be held in the hand of a user such that the user's thumb is positioned to operate the front control; and**

*Kotkin* discloses wherein the controller is shaped to be held in the hand of a user such that the user's thumb is positioned to operate the front control. *See, e.g., Ex. 1003, Kotkin* at [0028] (teaching "the video game controllers **100, 120** are conventionally held by the user by grasping the grips **110, 130** in the palm of the users hands such that the user's thumbs can access different actuators on the face of the controllers **100, 120.**").

The '551 Provisional also discloses that the controller is shaped to be held in the hand of a user such that the user's thumb is positioned to operate the front control. **Ex. 1004**, '551 Provisional at FIGs. 1-9, 12-14, A-E, I, L, M, and O.

**[1.d] a first back control and a second back control, each back control being located on the back of the controller and each back control including an**

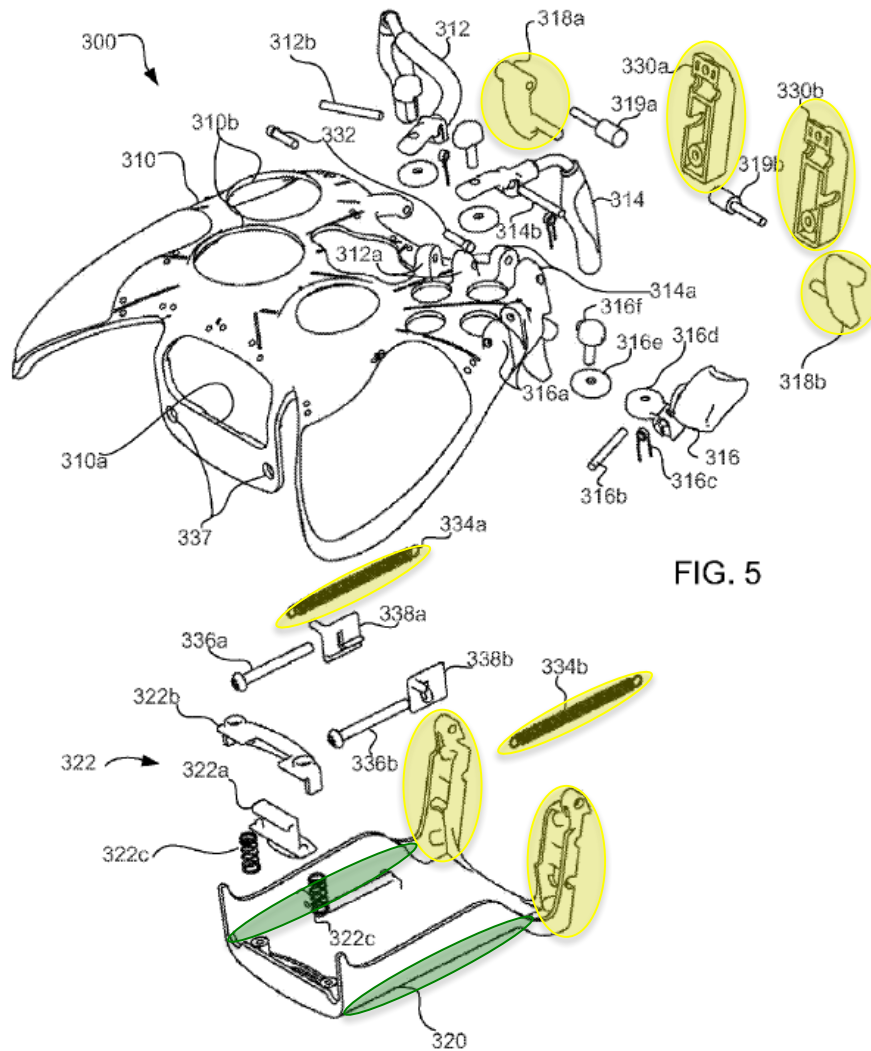
***elongate member that extends substantially the full distance between the top edge and the bottom edge and is inherently resilient and flexible.***

The '525 Patent defines a “back control” as a control that is engaged by the user at the back of the controller, i.e., a control engaged with fingers that naturally rest at the back of the controller when the controller is held. *See, e.g., Ex. 1001, '525 Patent* at Abstract (“**An improved controller** for a game console that . . . **has two additional controls located on the back in positions to be operated by the middle fingers of a user.**”); 1:49-58 (“**The present invention provides a hand held controller** for a video game console . . . shaped to be held in both hands of the user such that the user's thumbs are positioned to operate controls located on the front of the controller[,], the user's index fingers are positioned to operate controls located on the top edge of the controller[, and] **one or more additional controls [are] located on the back of the controller in a position to be operated by the user's other fingers.**”); 2:21-25 (“**The controller of the present invention is particularly advantageous over controllers according to the prior art as it comprises one or more additional controls located on the back of the controller in a position to be operated by middle fingers of a user.**”) (all emphases added).

*Kotkin* teaches two elongate members comprising back controls, i.e., controls that are engaged by a user at the back of the controller. For example, as illustrated in FIG. 3 depicting a Sony Playstation 3 controller, “flexible cable or

line 219” extends from trigger 119B, “under . . . the controller,” to lever 218. *Id.* at [0033]. *Kotkin* explains that providing such a control on the back of the controller “permits the trigger 117a to be actuated without using a thumb, or even an index finger.” *Id.* Similarly, the ’551 Provisional teaches this same flexible line connected to front triggers of either the Playstation 3 controller or Xbox 360 controller. *See, e.g., Ex. 1004, ’551 Provisional* at [0010], [0029], [0031], FIGs 1-2, 8-11.

As illustrated in FIGs. 5-7, *Kotkin* also teaches an alternative arrangement for multiple elongate back controls designed around a Microsoft XBox 360 controller. *Id.* at [0038]. As illustrated below, with highlighting emphasizing the key components, FIG. 5 provides the most detailed view of this alternative arrangement:



*Id.* at FIG. 5. *Kotkin* explains that paddle-style controls **318a** and **318b** (highlighted above) are mounted on a pivot and designed to engage front-mounted trigger controls on the video game controller. *Id.* at [0043]. The arrangement sandwiches these paddle-style controls between the yellow-highlighted portions of housing bottom **320** and yellow-highlighted housing covers **330a** and **330b** such that, “when the housing is closed with a controller therein, applying a slight pressure to one of the left or right sides of the housing bottom **320** [green highlighting above],

relative to the top housing **310** (i.e., thus ‘squeezing’ the housing), will actuate a trigger button (such as L1, L2 or R1, R2) on the end face of the controller with the appropriate trigger lever **318 a**, **318 b**.” *Id.* at [0043-0044]. Further, springs **334a** and **334b** (highlighted above) allow a user to adjust the amount of force necessary to engage the paddle-style controls. *Id.* at [0045-0046].

To the extent Patent Owner contends that the sides of the housing bottom **320** do not constitute two separate elongate back controls as claimed, it would have been obvious to implement cable/line 119 from the second embodiment on both sides of the controller, resulting in two separate, stand-alone flexible cables or lines. **Ex. 1008**, *Benden Decl.* at ¶¶19-20; *see also id.* at ¶¶14-16. In fact, *Kotkin* expressly states that the sides of the housing bottom **320** are intended to operate in the same way to accomplish the same goal as back control **219**. **Ex. 1003**, *Kotkin* at [0043] (“In the instant embodiment, the housing bottom **320** additionally acts as a pressure plate for operating left and right side triggers on the controller, much in the same way as is described in connection with the line **219** of FIG. 3.”). Given that *Kotkin* expressly describes these two alternate means of allowing a user to actuate elongate back controls (namely, as either (1) flexible cable or line **219** or (2) as the sides of housing bottom **320**), the modification proposed would be straightforward, not requiring undue experimentation, and would produce predictable results. Upon reading the disclosure of *Kotkin*, a person of ordinary

skill in the art would have recognized that these two back control means are simply alternate design choices and that the single disclosed flexible cable or line **219** could be implemented on both sides of the controller to actuate both trigger controls consistent with the second (Xbox) embodiment described above. *See Ex. 1008, Benden Decl.* at ¶19. One of ordinary skill would further have appreciated that this combination of embodiments would have been natural and an application of nothing more than ordinary skill and common sense *Id.*

Further evidencing that one of skill in the art would have found it obvious to implement two back controls as separate, stand-alone flexible cables or lines, the '551 Provisional illustrates this precise configuration. Although not expressly discussed in the specification portion of the provisional filing, FIGs A-L illustrate an embodiment that employs separate elongate controls on the back of an Xbox controller. *Id.* at ¶20 (concluding that FIGs. A-L of the '551 Provisional illustrate separate elongate members that actuate front-mounted trigger controls). FIGs C and F, reproduced below, provide clear views of these separate elongate controls:



FIG. C

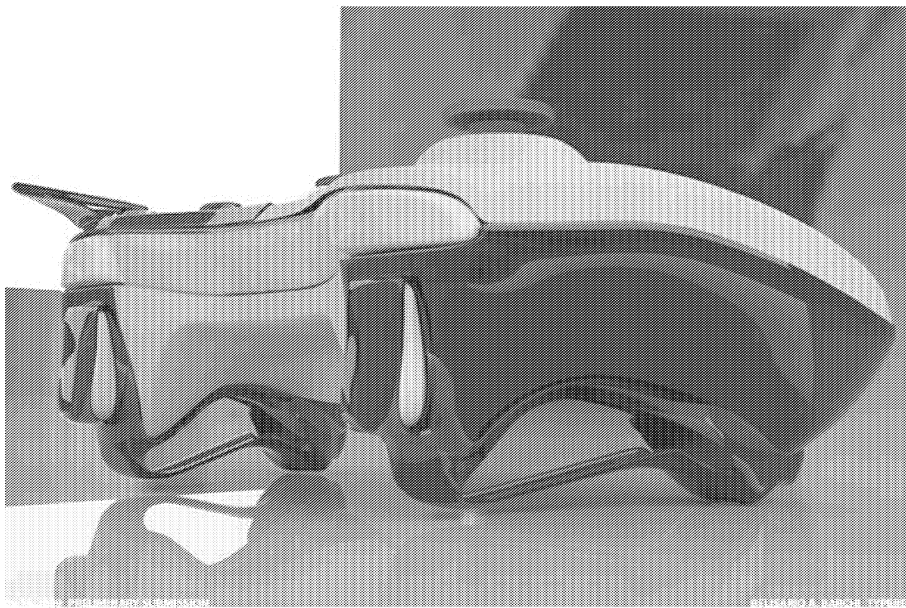


FIG. F

**Ex. 1004**, '551 *Provisional* at FIGs. C and F.

Moreover, in each of the above examples, the elongate member extends substantially the full distance between the top edge and the bottom edge of the controller. FIG. 6D shows that the sides of the housing bottom **320** extend nearly the full distance from the top edge to the tips of the handles:

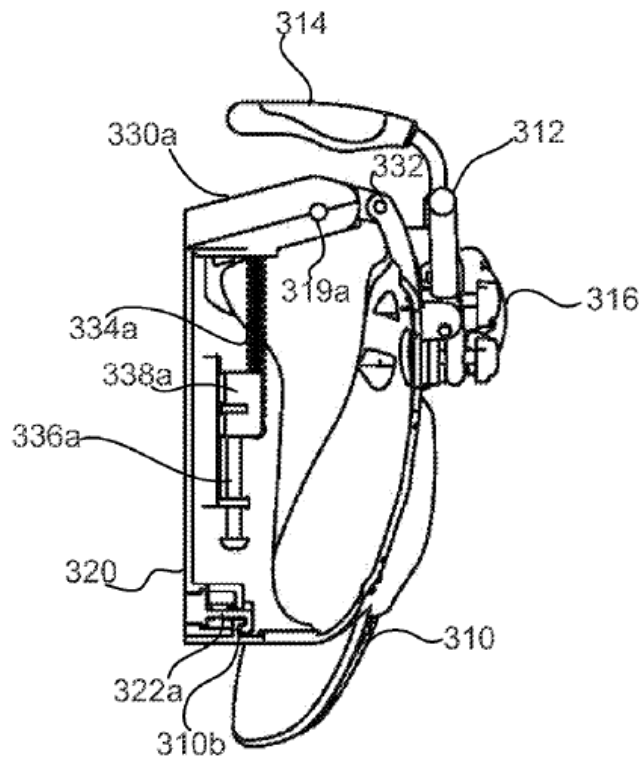
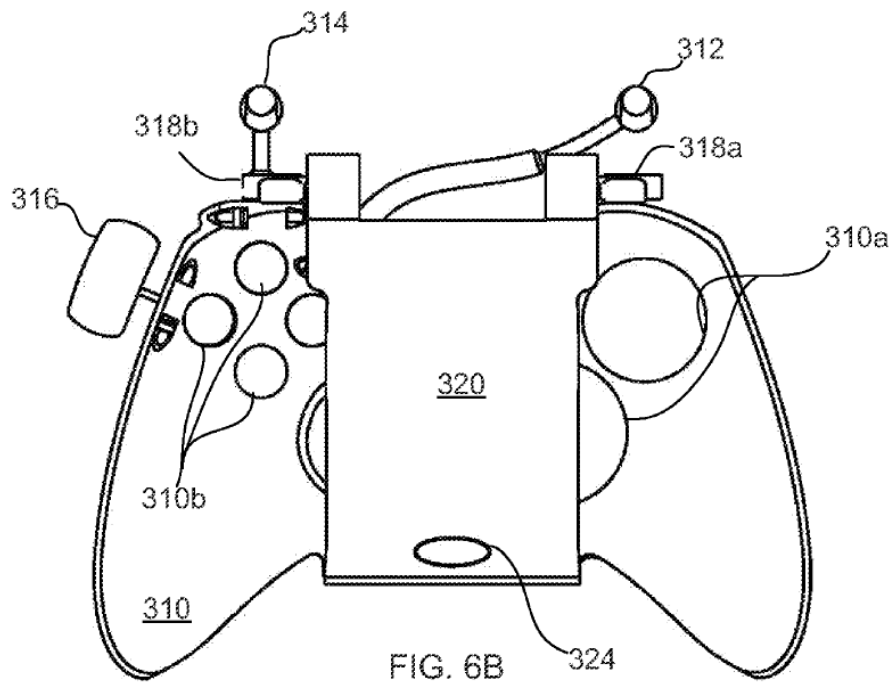


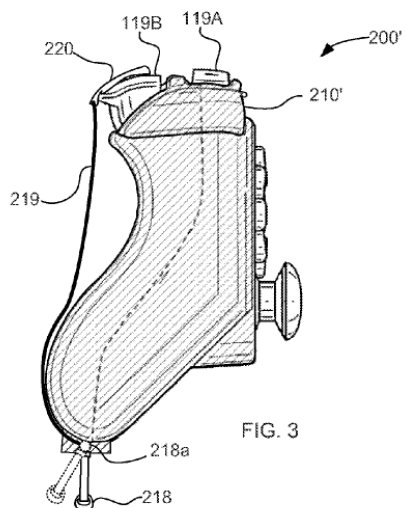
FIG. 6D

Further, FIG. 6B shows that the sides of the housing bottom **320** extend more than the full distance between the controller's top edge and the bottom edge (between the handles):





Similarly, FIG. 3 shows that back line **219** extends the full length from the top edge to the bottom tips of the handles:



The '551 Provisional discloses this same arrangement. *See, e.g., Ex. 1004, '551 Provisional* at [0010], [0029], [0031], FIGs 1-2, 8-11.

Petition for *Inter Partes* Review of U.S. Patent 8,641,525

Lastly, the '551 Provisional (shown below in FIGs. F and J) also shows multiple elongate members that extend nearly the full distance between the controller's top edge and tips of the handles:

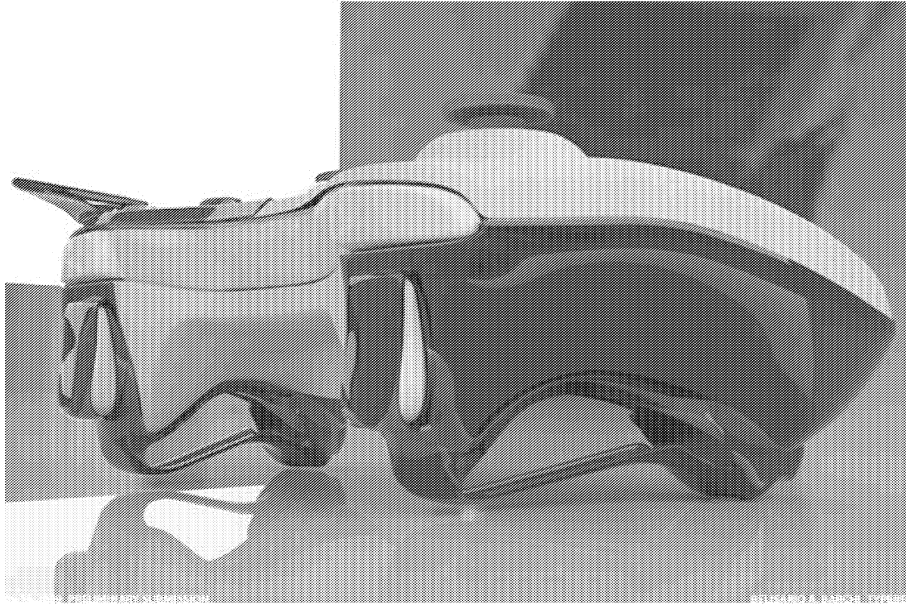


FIG. F

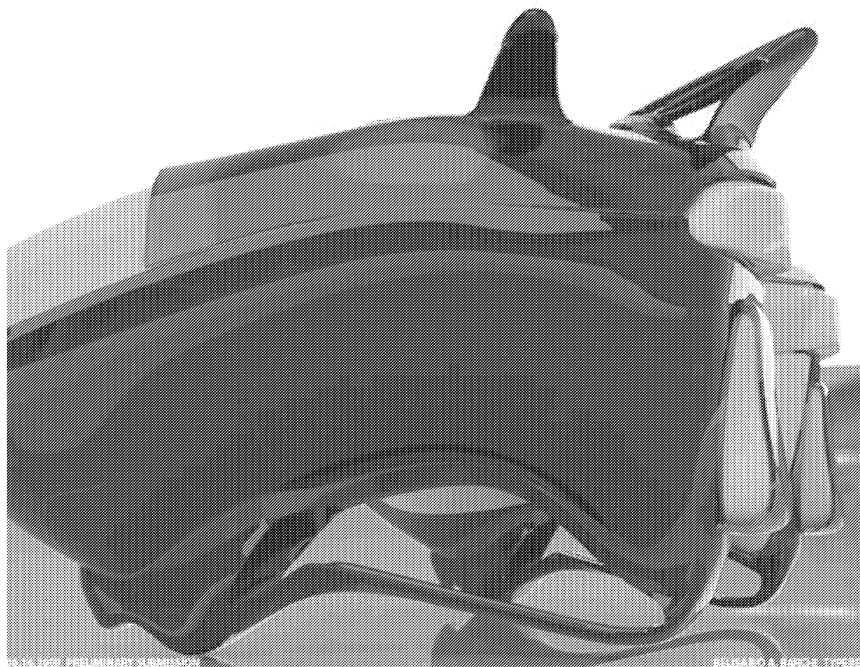


FIG. J

Similarly, each of the above examples disclose elongate members that are inherently resilient and flexible. The '525 Patent defines “inherently resilient” as meaning the elongate members “return to an unbiased position when not under load.” **Ex. 1001**, '525 Patent, at 3:33-34. And while the '525 Patent does not expressly define “flexible”, it notes that the elongate members may be formed from “flexible” materials, such as a plastic material like polyethylene. *Id.* at 3:28-30. Consistent with these definitions, the PTAB, in its Final Written Decision of IPR2016-00948 regarding the '525 Patent, defined “inherently resilient and flexible” as meaning that the elongate member “may be bent or flexed by a load, such as that from a user’s finger, and will then return to the unloaded position.” **Ex. 1002**, '525 Patent File History, IPR2016-00948, at 37 (P.T.A.B. Sept. 22, 2017). Applying this definition, it is clear that *Kotkin* discloses elongate members that are inherently resilient and flexible.

*Kotkin* discloses that the housing bottom **320** is capable of being flexed by a load when it is depressed by a user’s finger. **Ex. 1003**, *Kotkin*, at [0043]-[0044] (“In the instant embodiment, the housing bottom **320** additionally acts as a pressure plate . . . Thus, when the housing is closed with a controller therein, applying a slight pressure to one of the left or right sides of the housing bottom **320**, relative to the top housing **310** (i.e., thus ‘squeezing’ the housing), will actuate a trigger button.”). Moreover, a person having ordinary skill in the art would recognize that

the housing bottom would return to an unloaded position when the pressure from the user's finger is removed. **Ex. 1008**, *Benden Decl.* at ¶21. If it did not return to an unbiased position, the back control would be rendered inoperable for its intended purpose, as a user would only be able to actuate the control a single time. *Id.*

Similarly, regarding back line **219**, *Kotkin* discloses that back line **219** is “flexible.” **Ex. 1003**, *Kotkin*, at [0033]. *Kotkin* also discloses that the back line **219** can be pulled by a user, which in turn actuates the trigger buttons. *Id.* The back line **219** is also under tension. *Id.* A person having ordinary skill in the art at the time of the invention would thus recognize that the back line **219** would return to an unloaded position when a user's finger is removed. **Ex. 1008**, *Benden Decl.* at ¶21.

Finally, a person having ordinary skill in the art at the time of the invention would recognize that the elongate members disclosed in the '551 Provisional may be bent or flexed by a load, such as that from a user's finger, and will then return to the unloaded position. *Id.* As shown in the '551 Provisional, the elongate members on the back of the controller are a single uniform piece:

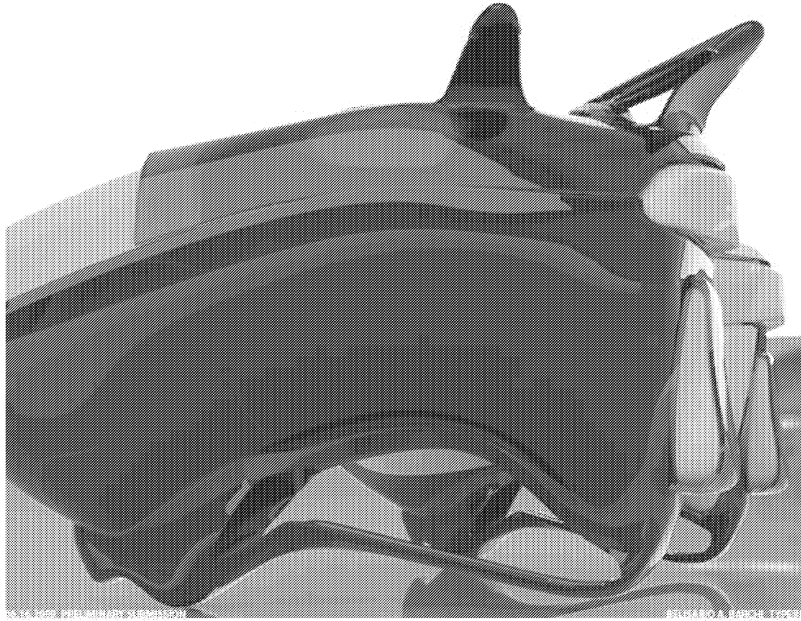


FIG. J

In order to actuate the trigger button, the user would depress the elongate member, which in turn would actuate the trigger button. *Id.* Upon release of the elongate member, it would return to its unbiased position. *Id.*

**iii. Claim 2**

***2. The controller of claim 1, further having a top edge control located on the top edge of the controller and wherein the controller is shaped such that the user's index finger is positioned to operate the top edge control.***

*Kotkin* teaches top edge controls including trigger and/or bumper buttons that are positioned on the top edge of the control. **Ex. 1003**, *Kotkin* at [0028] (“The user’s hands are additionally positioned such that the tips of the index fingers are held adjacent to the trigger and/or bumper buttons **118**, **119**, **128a**, **128b**, **129a**, **129b** of the controllers **100**, **120**.”). *Kotkin* further teaches that the controller is shaped such that the user’s index finger is positioned to operate the top edge

control. *Id.* at [0032] (“More particularly, during normal use, the controller **200** is gripped by the user such that the tips of the right and left index fingers are adjacent the buttons **118**, **119**, respectively, to enable use of the buttons **118**, **119**.”).

The '551 Provisional also discloses top edge controls consistent with the top edge controls in *Kotkin*. As an example, the following FIG. J illustrates a first control mounted on the upper portion of the controller front as well as a trigger control wrapped by a flexible elongate member that is mounted on the lower portion of the controller front:

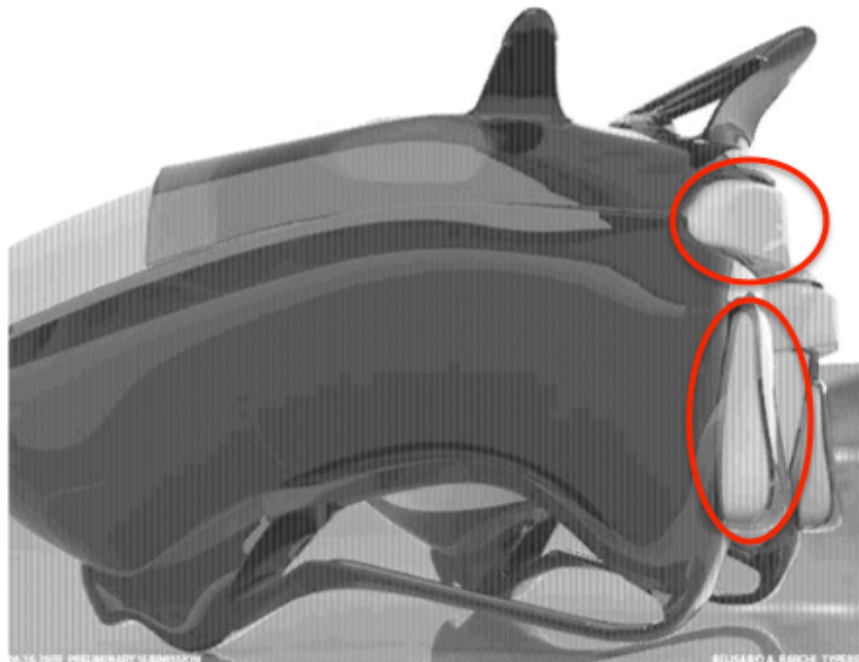


FIG. J

iv. **Claim 3**

**3. The controller of claim 2, wherein at least one of the back controls replicates the function of one or more of the top edge control and the front control.**

*Kotkin* teaches that the back controls can replicate the function of the top edge controls. Specifically, *Kotkin* teaches that the rear housing or housing bottom **320** “actually acts a pressure plate for operating left and right side triggers on the controller.” **Ex. 1003**, *Kotkin* at [0043]. As noted with respect to limitation 1.d, applying a slight pressure to one of the left or right sides of the housing bottom **320**, relative to the top housing **310** (i.e., thus ‘squeezing’ the housing), will actuate a trigger button (such as L1, L2 or R1, R2) on the end face of the controller with the appropriate trigger lever **318 a**, **318 b**.” *Id.* at [0043-0044]. Further, springs **334a** and **334b** allow a user to adjust the amount of force necessary to engage the paddle-style controls. *Id.* at [0045-0046].

Additionally, the stand-alone flexible cables or lines replicate the function of the trigger buttons. **Ex. 1003**, *Kotkin* at [0033] (“Applying pressure to the line **219**, even lightly, with the palm of the user’s hand will pull the trigger **119B**.”)

Similarly, the ’551 Provisional discloses such an arrangement utilizing two separate back controls:

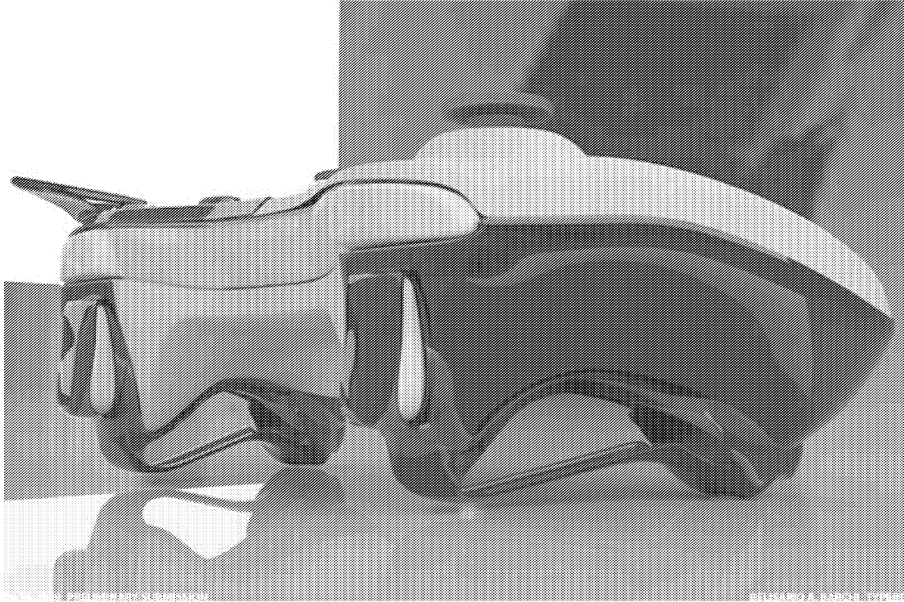


FIG. F

**Ex. 1004**, '551 *Provisional* at FIGs. C and F. In this configuration, the back controls replicate the functions of the trigger controls in the same manner as described above by *Kotkin*.

**v. Claim 5**

**5. The controller of claim 2, wherein the top edge is substantially perpendicular to the front.**

*Kotkin* discloses that the top edge of the controller is substantially perpendicular to the front. For example, where the housing bottom is viewed as the elongate member, FIGs. 6C and 6D show a side view of the outer controller case demonstrating that the top edge is substantially perpendicular to the front:



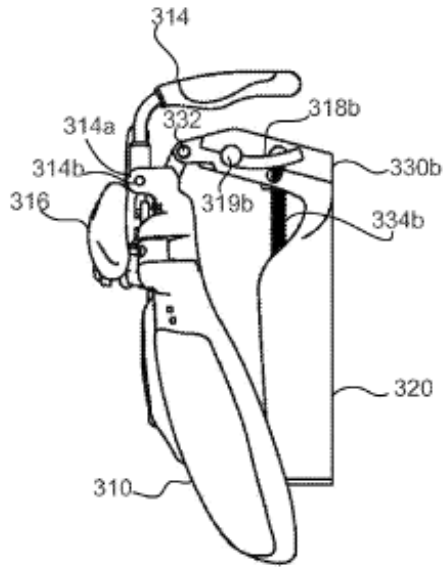


FIG. 6C

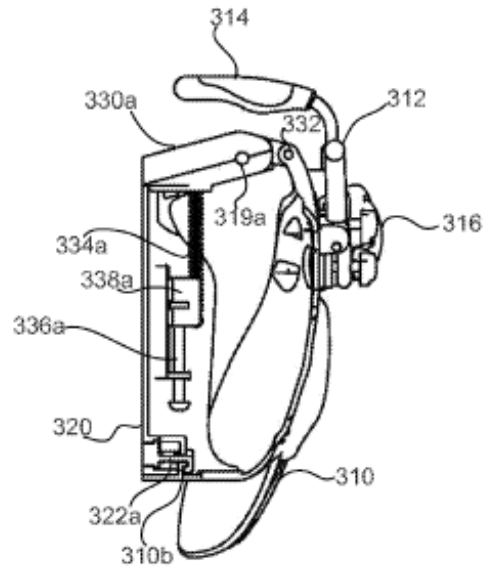


FIG. 6D

Similarly, FIG. 3 shows that that a top edge of the controller is substantially perpendicular to the front of the controller:

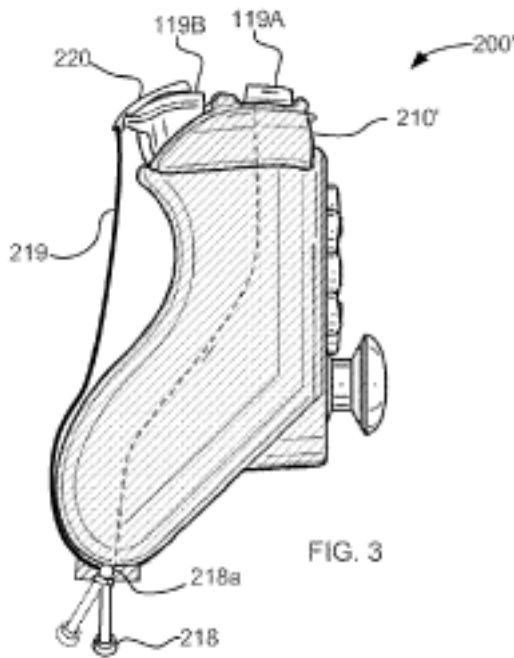


FIG. 3

Petition for *Inter Partes* Review of U.S. Patent 8,641,525

Lastly, the '551 Provisional also discloses a controller having a top edge that is substantially perpendicular to the front surface:

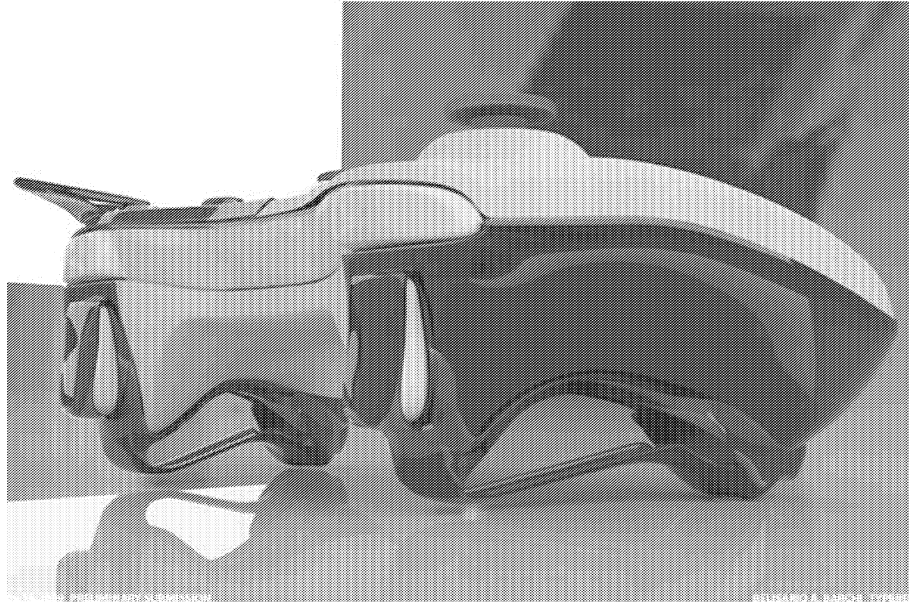


FIG. F

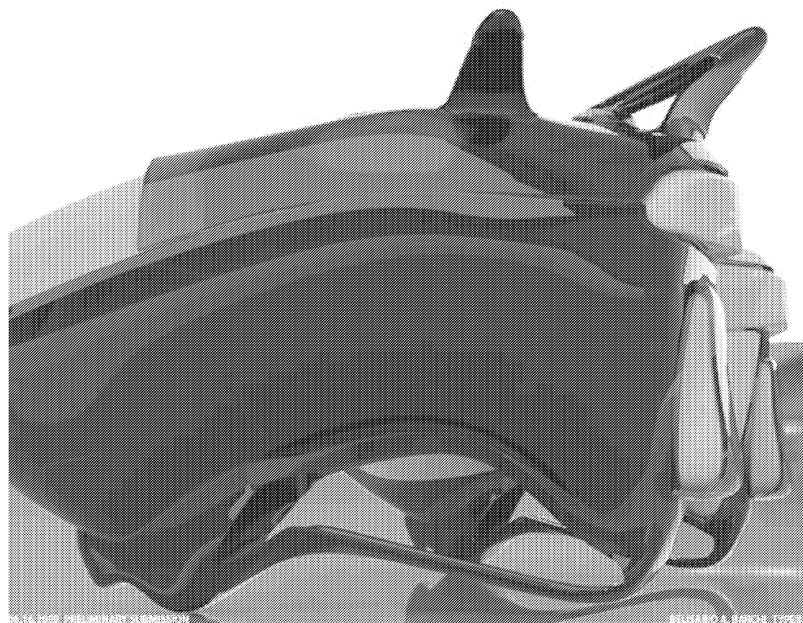


FIG. J

vi. **Claim 6**

**6. The controller of claim 1, wherein each of the back controls is positioned to be operated by a middle finger of a user.**

*Kotkin* does not explicitly disclose that the back controls would be operable by a middle finger of a user. However, a person of ordinary skill in the art at the time of the invention would recognize that the back controls are in a position to be operable by the user's middle finger. For example, FIG. 3 of the '525 Patent shows how a standard-shaped video game controller (such as an Xbox controller) is held in a user's hand:

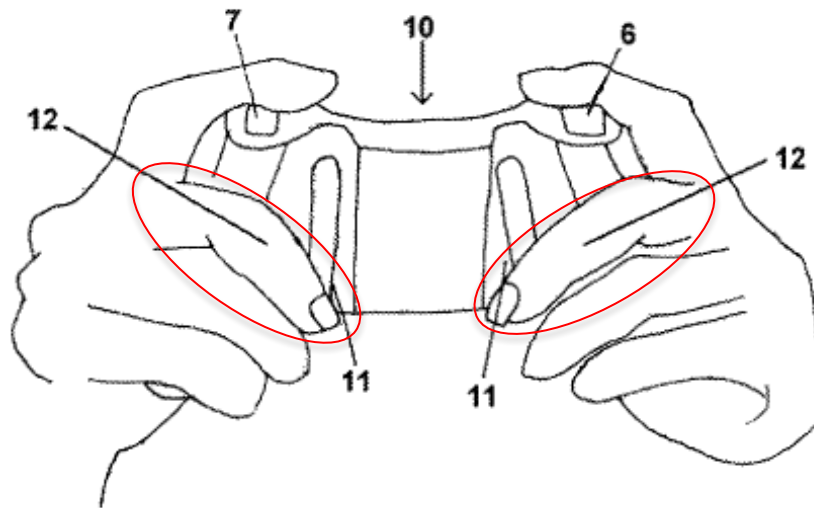


Figure 3

As shown, when a standard-shaped video game controller, like those also disclosed in *Kotkin*, are held in a user's hand, the user's middle fingers (circled in red above) extend towards the center of the back face of the controller. Because *Kotkin* and the '551 Provisional are based on the same Xbox controller design as the '525

Patent, a person of ordinary skill in the art would recognize that the various controller embodiments disclosed in *Kotkin* would be held in exactly the same fashion. See **Ex. 1003**, *Kotkin* at [0026-0027] (noting the disclosed invention is described with reference to the Microsoft Xbox controller); **Ex. 1008**, *Benden Decl.* at ¶¶14-16, 22 (concluding that both *Kotkin* and the '551 Provisional describe modified Xbox controllers that would place the back controls in a position to be operated by a user's middle fingers just as disclosed in the '525 Patent).

**vii. Claim 7**

**7. The controller of claim 1, wherein each elongate member is mounted within a recess located in the case of the controller.**

The '525 Patent does not explicitly define "recess." However, the PTAB, in its Final Written Decision for IPR2016-00948, concluded that "the claims require the back of the outer case of the controller to include an indentation." **Ex. 1002**, '525 Patent File History, IPR2016-00948, at 306 (P.T.A.B. Sept. 22, 2017).

Applying this definition, *Kotkin* discloses elongate members mounted within a recess located in the case of the controller. Namely, one of skill in the art would understand from the illustrations in FIGs. 5-7 that the elongate edges of housing bottom 320 are mounted in the recessed area between the handles. **Ex. 1008**, *Benden Decl.* at ¶¶14-16, 23 (concluding that the depressible edges of housing bottom 320 would rest within the recess created between the controller handles).

The following figures illustrate this arrangement:

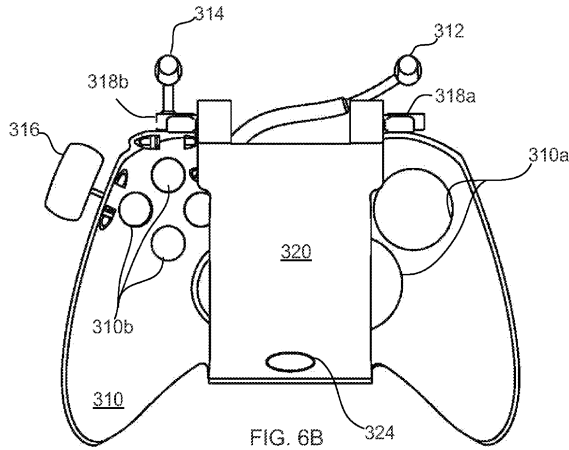


FIG. 6B

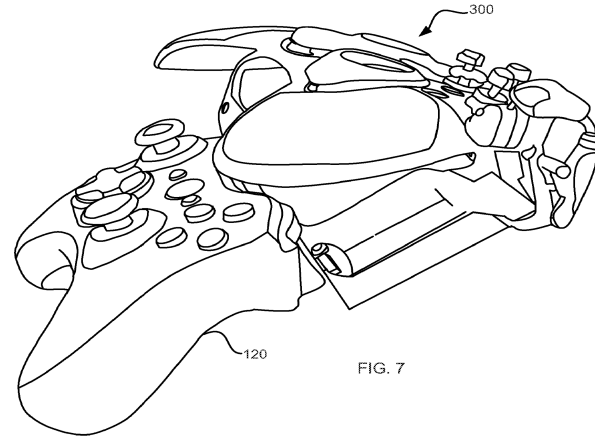


FIG. 7

**viii. Claim 8**

**8. The controller of claim 7, wherein each elongate member comprises an outermost surface which is disposed in close proximity to the outermost surface of the controller such that a user's finger may be received in said respective recess.**

As described above regarding Claim 7, *Kotkin* discloses that the depressible edges of housing bottom 320 are mounted within the recess created between the controller handles. It would have been obvious to one of skill in the art to mount said housing bottom sufficiently close to the back of the controller such that a user's finger may be received in said recess. **Ex. 1008**, *Benden Decl.* at ¶¶14-16, 23 (concluding it would have been obvious to position the housing bottom 320 close in proximity to the controller back). Such a configuration is nothing more than a common sense design choice that would result in a more streamlined and less bulky controller. *Id.*

**ix. Claim 9**

**9. The controller of claim 1, wherein each elongate member has a thickness between about 1mm and 10 mm.**

*Kotkin* does not explicitly disclose the thickness of the elongate members. However, a person of ordinary skill in the art at the time of the invention would recognize that the plastic cover, of which the housing bottom **320** is a component of, disclosed by *Kotkin* would have a thickness of between 1 mm and 3 mm. **Ex. 1008**, *Benden Decl.* at ¶24 (concluding that the plastic housing bottom in *Kotkin* would have a thickness above 1mm to provide sufficient physical structure, but not thicker than 3mm to ensure adequate flexibility). Further, based on the known dimensions of the Xbox and Playstation controllers depicted in *Kotkin*, one of skill in the art would recognize that the housing bottom 320 is depicted with a thickness between 1mm and 3mm. *Id.*

Additionally, a person of ordinary skill in the art at the time of the invention would understand that line **219** disclosed by *Kotkin* has a thickness of between 1 mm and 3 mm. *Id.* (concluding that the line, like the housing bottom, would need to have at least 1mm thickness for structural purposes, but would not be more than 3mm thick to ensure it was adequately flexible).

Lastly, a person of ordinary skill in the art at the time of invention would understand that the elongate members utilized in the '551 Provisional would also have a thickness of between 1 mm and 3 mm. *Id.* (concluding that the elongate

members in the '551 Provisional, like those in *Kotkin*, are also between 1mm and 3mm).

**x. Claim 10**

***10. The controller of claim 1, wherein each elongate member has a thickness between about 1 mm and 5 mm.***

See Claim 9.

**xi. Claim 11**

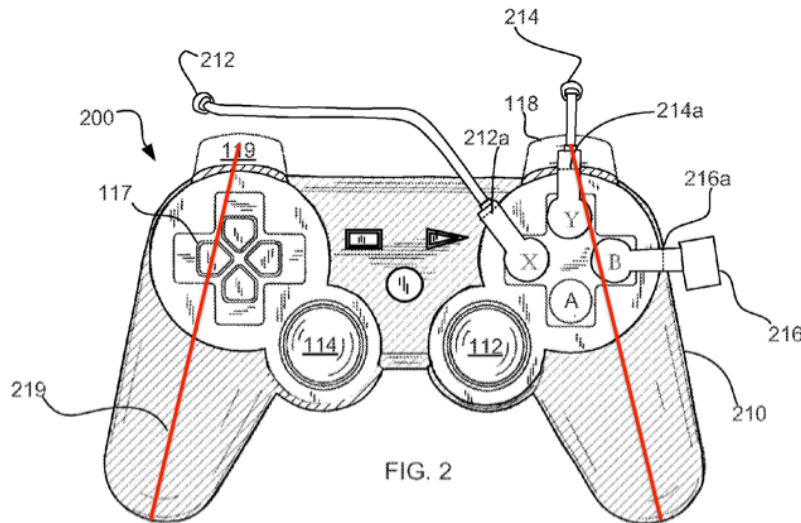
***11. The controller of claim 1, wherein each elongate member has a thickness between about 1 mm and 3 mm.***

See Claim 9.

**xii. Claim 13**

***13. The controller of claim 1, wherein the elongate members converge towards the front end of the controller with respect to one another.***

As discussed above regarding Claim 1, it would have been obvious to implement both *Kotkin* back controls as separate, stand-alone flexible cables or lines consistent with back control **219** described at [0033] and illustrated in FIG. 3. The result of this configuration would be flexible cable or lines that extend from the ends of the controller handles to the top-mounted trigger controls. The following annotated FIG. 2 illustrates the location of these flexible controls from the perspective of the front of the controller:



As illustrated, the elongate controls converge toward one another as they approach the top edge of the controller.

**xiii. Claim 14**

**14.** *The controller of claim 1, wherein a portion of at least one of the first back control and the second back control is in registry with a switch mechanism disposed within the controller, such that displacement of the at least one back control activates the switch mechanism.*

*Kotkin* discloses that a portion of the back controls are in registry with a switch mechanism disposed within the controller, such that displacement of the at least one back control activates the switch mechanism. Specifically, in each of the embodiments disclosed in *Kotkin*, the back control is in registry with a trigger button, which is disposed within the control. Regarding the housing bottom **320**, and as set forth with respect to limitation 1.d. with respect to annotated FIG. 5 below, the housing bottom **320** is in registry with the trigger buttons via paddle-



style controls **318a** and **318b** (highlighted below) which are mounted on a pivot and designed to engage front-mounted trigger controls on the video game controller. **Ex. 1003**, *Kotkin* at [0043]. These paddle-style controls are sandwiched between the yellow-highlighted portions of housing bottom **320** and yellow-highlighted housing covers **330a** and **330b** such that, “when the housing is closed with a controller therein, applying a slight pressure to one of the left or right sides of the housing bottom **320** [green highlighting above], relative to the top housing **310** (i.e., thus ‘squeezing’ the housing), will actuate a trigger button (such as L1, L2 or R1, R2) on the end face of the controller with the appropriate trigger lever **318 a**, **318 b**.” *Id.* at [0043-0044].

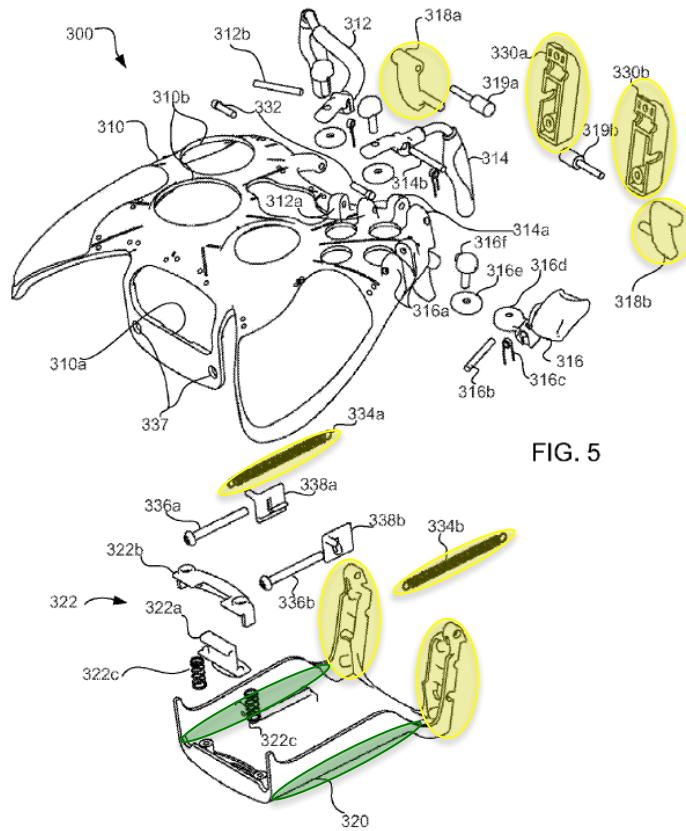


FIG. 5

Similarly, the remaining embodiments show that the elongate members are directly in registry with the trigger buttons, as shown in each of the annotated figures below:

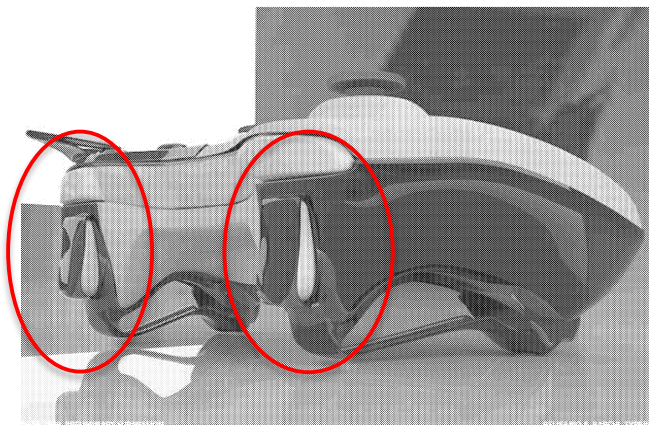


FIG. F

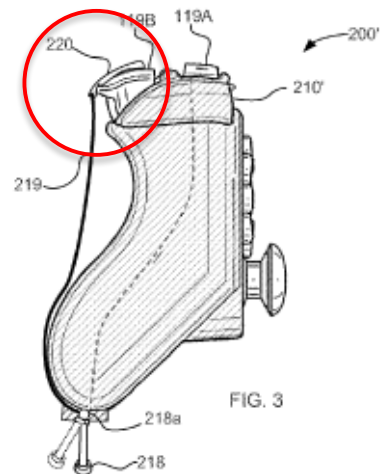


FIG. 3

xiv. **Claim 17**

**17. The controller of claim 1, wherein at least one of the back controls is substantially parallel to the front of the controller.**

*Kotkin* discloses that the elongate members (housing bottom **320** and back line **219**) are substantially parallel to the front of the controller:

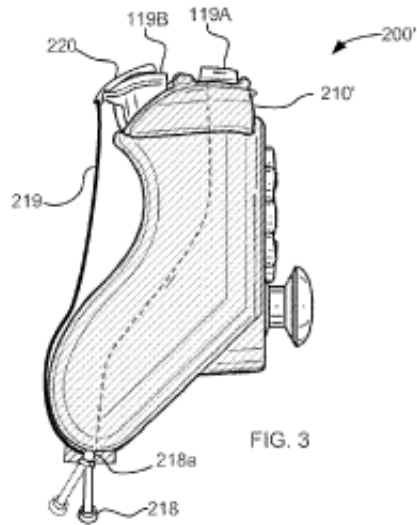


FIG. 3

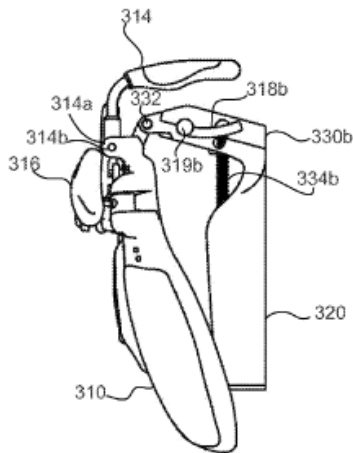


FIG. 6C

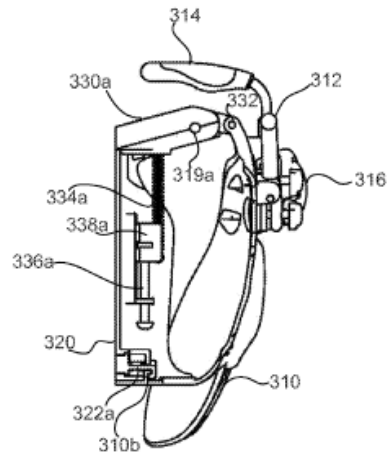


FIG. 6D

Similarly, FIG. F from the '551 Provisional shows back controls that are substantially parallel to the front of the controller:

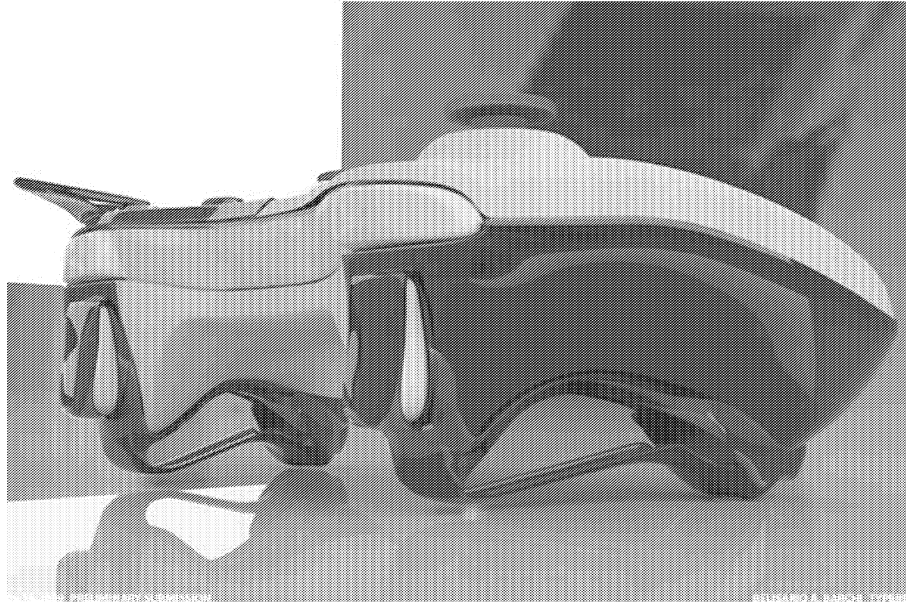


FIG. F

xv. **Claim 18**

**18. The controller of claim 1, wherein at least one of the back controls is formed as an integral part of the outer case.**

*Kotkin* discloses wherein the back controls are formed as an integral part of the outer case. As discussed above with regard to limitation 1(a), the outer shell in *Kotkin* surrounds a standard video game controller and its bottom housing **320** comprises the elongate control members on the back of the controller. Bottom housing 320 is connected to the top housing **310** via hinge pins **332** that are “press fitted into the top housing **310**,” causing the two housing to be rotatably secured to one another. **Ex. 1003**, *Kotkin* at [0042]. Accordingly, the back controls are an integral part of the outer shell in *Kotkin*.

Similarly, the '551 Provisional discloses integrally formed back controls, as can be seen in FIG. F:

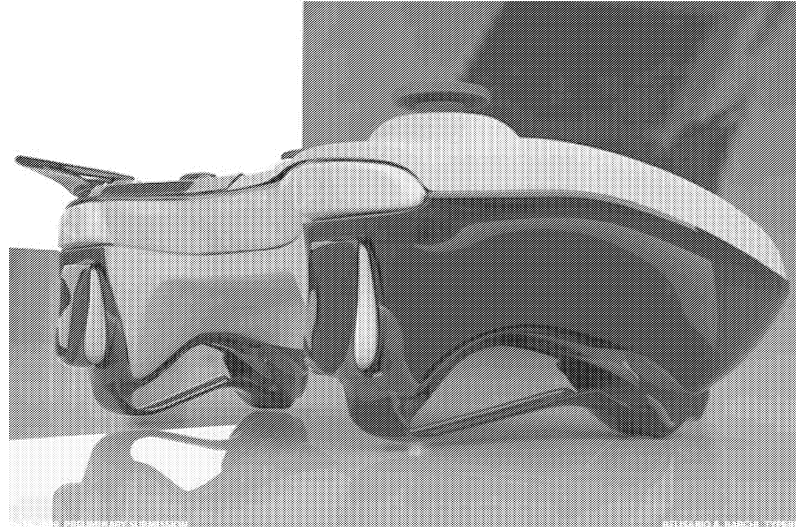


FIG. F

**xvi. Claim 20**

***[20.pre] A hand held controller for a game console comprising:***

*See limitation 1.pre.*

***[20.a] an outer case comprising a front, a back, a top edge, and a bottom edge, wherein the back of the controller is opposite the front of the controller and the top edge is opposite the bottom edge;***

*See limitation 1.a.*

***[20.b] a front control located on the front of the controller, wherein the controller is shaped to be held in the hand of a user such that the user's thumb is positioned to operate the front control; and***

*See limitation 1.b and 1.c.*

***[20.c] a first back control and a second back control, each back control being located on the back of the controller and each back control including an***

*elongate member that extends substantially the full distance between the top edge and the bottom edge.*

See limitation 1.d.

**B. Ground 2: Claims 1-11, 13-17, and 19-20 of the '525 Patent are Obvious Under *Willner* in View of *Koji* and in further view of *Raymond***

**i. *Willner, Koji, and Raymond***

U.S. Patent No. 6,760,013 to Michael A. Willner, et al. ("*Willner*") issued on July 6, 2004 and thus qualifies as prior art to the '525 Patent under pre-AIA 35 U.S.C. § 102(b). While *Willner* was listed on a Notice of References cited during prosecution, *Willner* was not discussed.

Japanese Patent Publication JPH1020951 to Tsuchiya Koji ("*Koji*") published on January 23, 1998 and thus qualifies as prior art to the '525 Patent under pre-AIA 35 U.S.C. § 102(b).<sup>1</sup> *Koji* was not considered during prosecution.

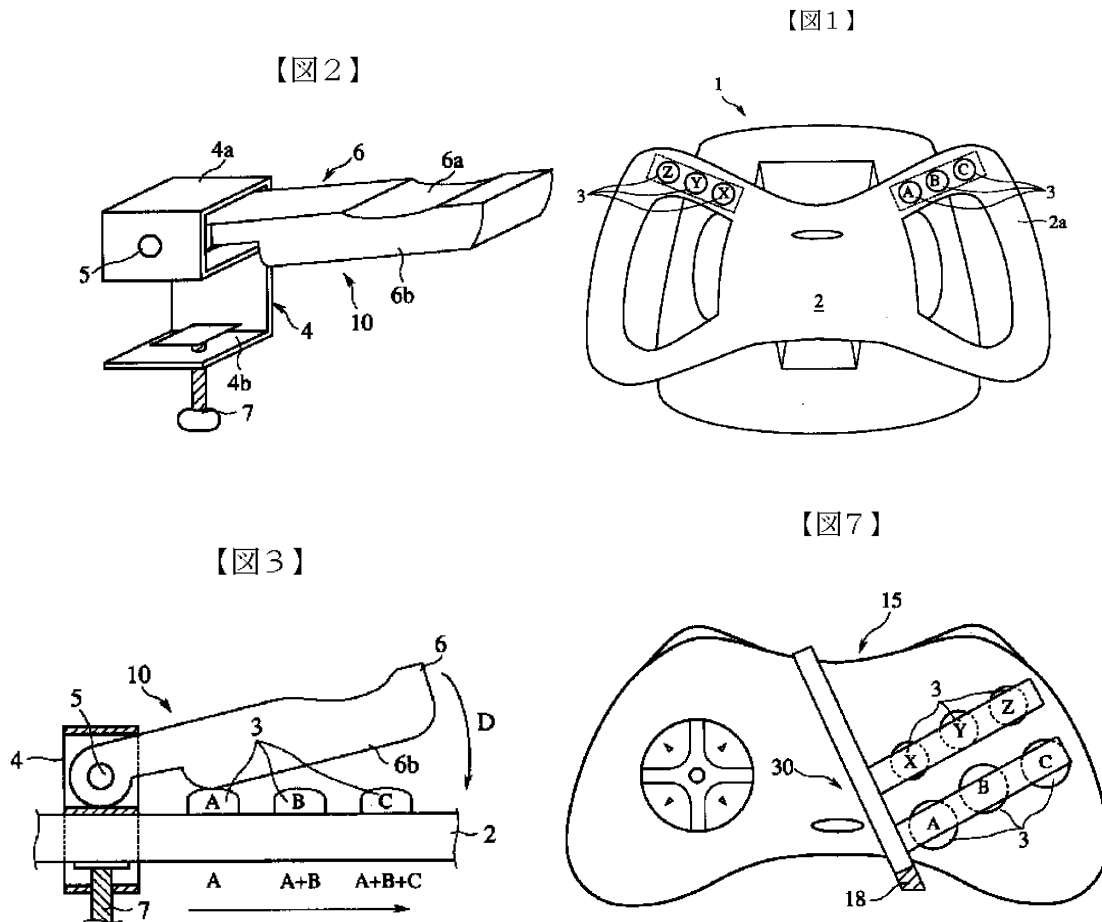
*Willner* teaches a handheld game controller with multiple top-mounted, front-mounted, and bottom-mounted switch keys, as depicted in the following images:

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<sup>1</sup> All references are to the English Translation of the original Japanese Patent, attached as **Exhibit 1006**. An affidavit for the translation is attached as **Exhibit 1010** and the original Japanese publication is attached as **Exhibit 1011**.



illustrate this trigger accessory, alone and installed on various video game controllers:

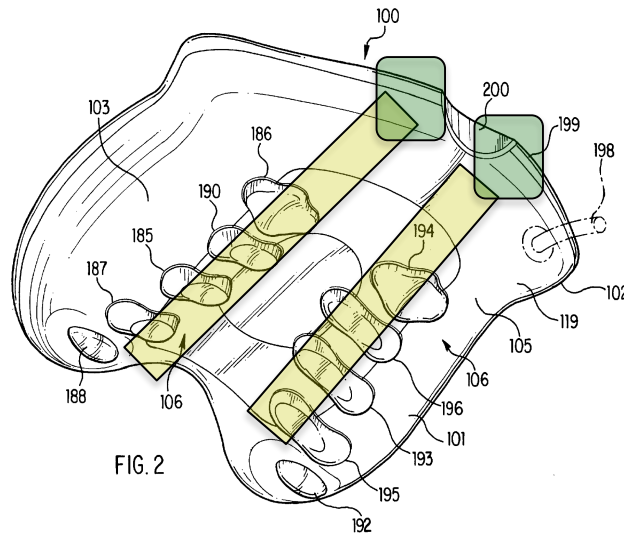


*Id.* at FIGS. 1-3, 7. A specific functionality enabled by the elongate paddle of *Koji* allows a user to provide input based on an intended force applied to the control. This type of functionality was previously limited to analog-type controls, which could detect the force/speed at which it was engaged. Digital switches, on the other hand, were always in one of two states—on or off—and could not relay any additional information from the user. By mounting an elongate paddle across multiple digital switch keys, as illustrated in FIG. 3 above, a user can indicate



intended force ranging from soft (e.g., where only the A key is depressed) to firm (e.g., where all three keys, A+B+C, are depressed). *Id.* at [0024]. Through this arrangement, Koji explains that the elongate paddle provides for “pseudo-analog input.” *Id.* at [0005].

It would have been obvious to one of skill in the art to add *Koji's* paddle accessory to the video game controller taught by *Willner*. See **Ex. 1008**, *Benden Decl.* at ¶26-27, 34. The *Willner* controller already contains all the key arrangement contemplated by *Koji*. *Id.* at ¶27. Namely, *Willner* includes rows of multiple keys on the bottom-side of its controller. *Id.* Mounting *Koji's* elongate paddles on both under-sides of the *Willner* controller would thus be straightforward, would not require undue experimentation, and would produce predictable results. *Id.* Upon reading the disclosure of *Koji*, a person of ordinary skill in the art would have recognized that its elongate paddles could be mounted on the under-side of a controller like *Willner's* to create a video game controller capable of producing quasi-analog inputs in addition to the pre-existing digital input. *Id.* The combined system would be arranged as depicted in the following illustration:



The yellow elongated boxes indicate where the paddle controls (reference number “6”) from *Koji* would be mounted on both sides of the *Willner* controller. *Id.* Additionally, the green boxes indicate where the *Koji* mounting portion (reference number “4”) would be attached to the *Willner* controller using tightening screw (reference number “7”). *Id.* However, alternate methods of attachment could be used. *See Ex. 1006, Koji* at [0027] (“in other embodiments, mating holes, projections, or the like may be formed on the controller, and part of the device mated therewith to firmly combine the two into a single whole.”).

Because the proposed combination is a direct application of the express teachings of *Koji* (i.e., the combination adds the *Koji* paddles to precisely the type of game controller *Koji* contemplates), it would have required nothing more than ordinary skill and common sense to produce, and *Koji* itself provides the express motivation for making such a combination. *See Ex. 1008, Benden Decl.* at ¶27; *see*

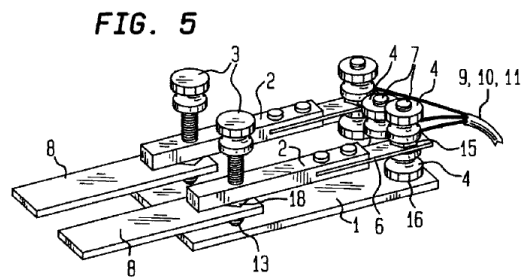
also **Ex. 1006**, *Koji* at [0026] (“[T]he multistage trigger device according to the present invention **is not limited with respect to the number or layout of trigger buttons** on the controller, and **can be applied to controllers of any trigger button layout** by altering the length or number of the levers 6...”) (emphasis added). Further, one of skill in the art would recognize that the described combination could be implemented either (1) with the standalone *Koji* accessory mounted on the *Willner* controller or (2) with the *Koji* paddle and mount design incorporated as a permanent design element within the *Willner* controller. **Ex. 1008**, *Benden Decl.* at ¶27.

Accordingly, with regard to the '525 Patent claims, the only feature missing from the *Willner-Koji* combination is the use of an inherently resilient and flexible paddle, rather than a pivoting paddle. As described below, the concept of using an inherently resilient and flexible paddle to operate a button is a well-known principal of mechanical engineering and it would have been obvious to one of skill in the art to look to all types of levers use in finger-operated electronic devices. *See Ex. 1008*, *Benden Decl.* at ¶¶26, 29-30, 34.

U.S. Patent No. 5,773,769 to Christopher W. Raymond (“*Raymond*”) issued on June 30, 1998 and thus qualifies as prior art to the '525 Patent under post-AIA 35 U.S.C. § 102(a)(1) and 35 U.S.C. § 103. *Raymond* was not considered during prosecution. *See Ex. 1001*, '525 Patent. *Raymond* teaches a lever key for electronic

code transmission, which is activated via a user's middle finger, index finger, or thumb. **Ex. 1007**, *Raymond* at 2:22-25. *Raymond* is reasonably pertinent to the particular problem with which the inventor of the '525 Patent was concerned, because *Raymond* describes a configuration for finger-operated paddle controls on an electronic device. See **Ex. 1007**, *Raymond* at 2:15-28; see also **Ex. 1001**, '525 Patent at 1:49-57; **Ex. 1008**, *Benden Decl.* at ¶29.

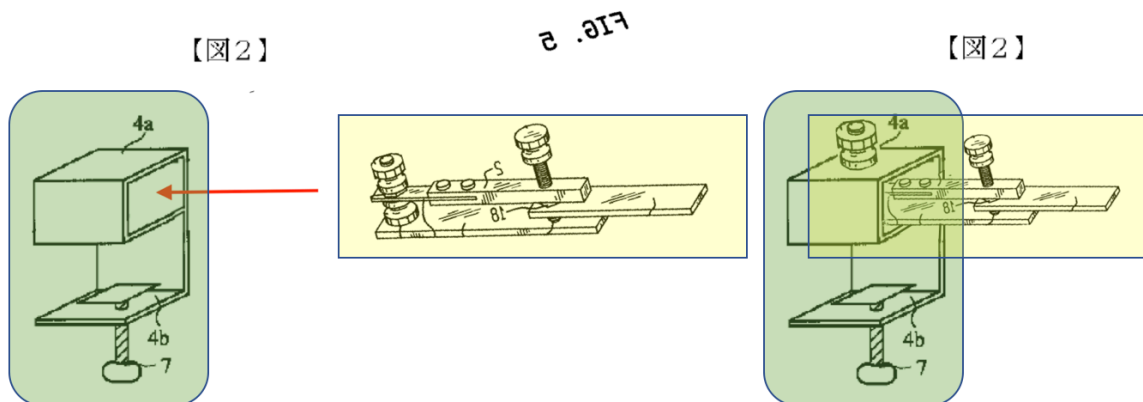
*Raymond* explains that the paddles are made from a flat, flexible metal strip, which provide a more comfortable and economical lever. *Id.* at 2:16-17; 1:32-33.



It would be obvious to one of skill in the art that non-flexible pivoting lever used by *Koji* could be replaced with any type of lever used in finger-operated electronic devices, such as *Raymond's* flexible lever. See **Ex. 1008**, *Benden Decl.* at ¶¶29-30. Further, one of ordinary skill in the art would choose a fixed, flexible lever, such as *Raymond's* to provide a more efficient and responsive lever for the user. *Id.* at ¶30. Where a pivoting lever like that depicted in *Koji* is used, the underlying switches themselves are relied upon to return the lever to its un-depressed position. One of skill in the art would recognize that such switches are not necessarily designed to

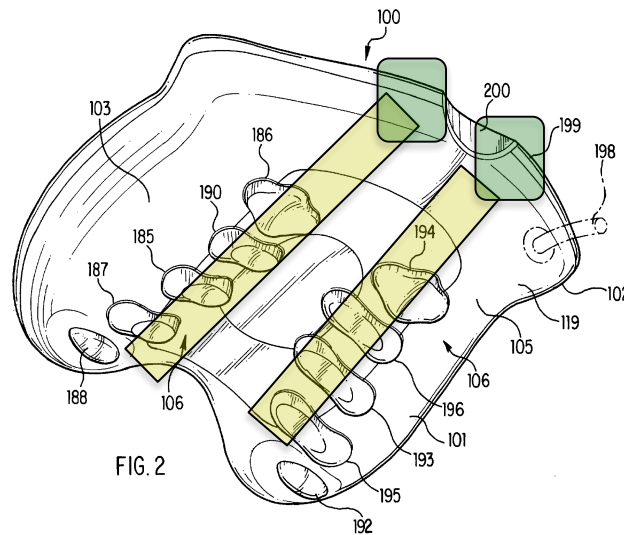
provide sufficient force to return a paddle to its un-depressed position, so responsiveness may suffer as a result. *Id.* An obvious solution to this responsiveness issue is to utilize a non-pivoting paddle like that described by *Raymond*, which utilizes a tensioned “flat flexible metal strip” to ensure that the paddle mechanism returns to its un-depressed position in an efficient manner. *Id.* A person of skill in the art would be further motivated to utilize the simpler fixed flexible paddle of *Raymond* in place of the hinged *Koji* paddle from cost and durability perspectives. *Id.* at ¶31.

The combined system would be arranged as depicted in the following illustration:



The proposed combination utilizes the flexible and resilient paddles from *Raymond* and secures them within *Koji*'s accessory, which provides lateral support to the *Raymond* lever. *Koji* depicts a non-flexible member mounted in a channel using a

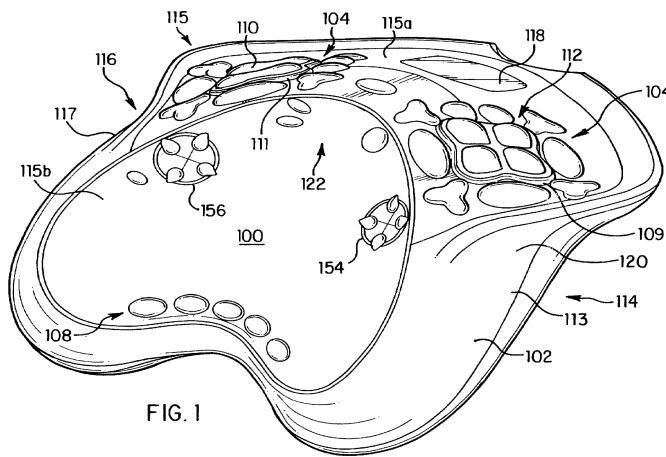
pivot pin 5. **Ex. 1006**, *Koji* at FIG 2. However, the paddles could be mounted as any type of lever to achieve the same function. *See Ex. 1008*, *Benden Decl.* at ¶30. The proposed combination would secure the *Raymond* paddles in the *Koji* channel-mounts using non-pivoting means such as a screw. *Id.* Because, it is a basic principal of structural mechanics that lever can have multiple mechanisms of action (e.g., pivoting on a fulcrum, or a fixed, but flexible lever) one of ordinary skill in the art would understand that one known lever mechanism could be substituted for another known lever mechanism without undue experimentation to produce expected and predictable results. *Id.* The proposed *Koji-Raymond* flexible lever would be mounted on the *Willner* controller as discussed above, the combined system would be arranged as depicted in the following illustration:



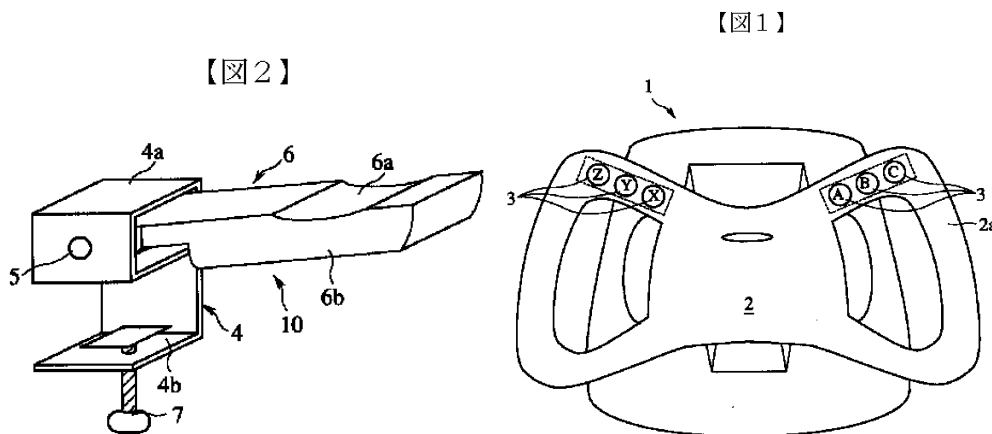
ii. **Claim 1**

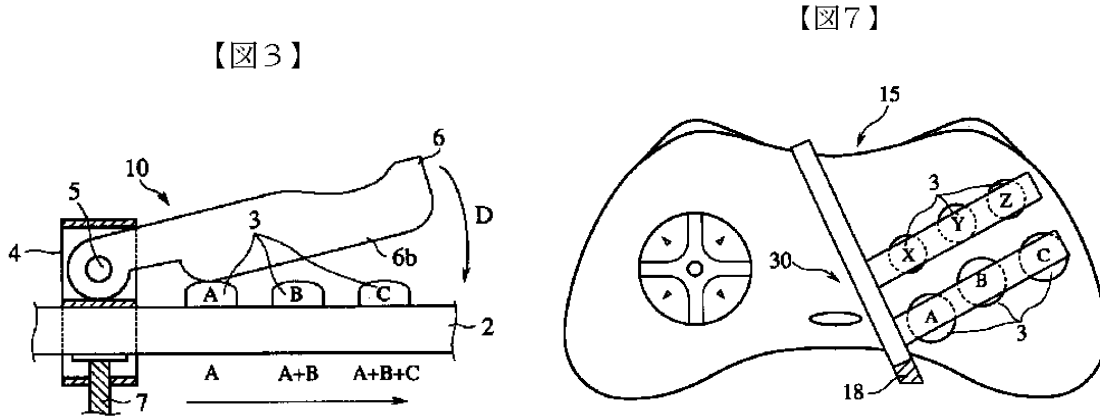
**[1.pre]** A hand held controller for a game console comprising:

*Willner* discloses a hand held controller for a game console. See, e.g., **Ex. 1005**, *Willner* at 1:15-17 (noting “this invention directs itself to a hand held gaming and data entry system which can function as a game controller”); see also *id.* at FIG. 1:



Additionally, as depicted in the following figures, *Koji* teaches an accessory intended to be mounted on a hand held controller for a game console:



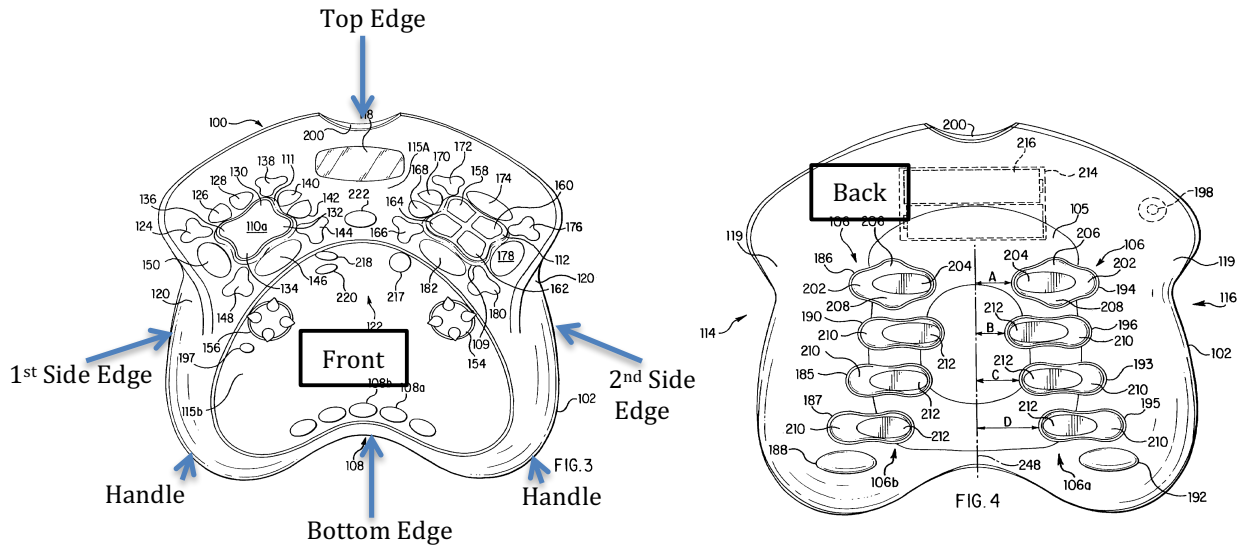


**Ex. 1006**, *Koji* at FIGs. 1-3, 7; *see also id.* at [0001] (“The present invention relates to a multistage trigger device that is mounted on, for example, a video game controller.”).

**[1.a]** *an outer case comprising a front, a back, a top edge, and a bottom edge, wherein the back of the controller is opposite the front of the controller and the top edge is opposite the bottom edge; and*

Like the '525 Patent, *Willner* teaches a hand-held controller for a game controller of a standard shape, which include opposing front and back faces, opposing top and bottom edges, and handles adjacent the side edges. The following annotated figures from *Willner* label each of these claimed features:

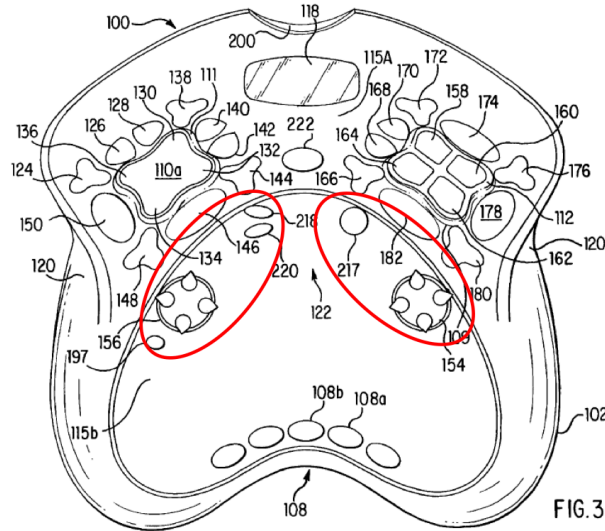




**[1.b] a front control located on the front of the controller;**

Willner discloses front controls located on the front of the controller. **Ex. 1005**, *Willner* at Abstract (“A hand held gaming and data entry system (100, 100’, 100’’) has an ergonomic housing (102) including thumb operated controls (104) which generate a first set of electrical signals . . .”); 1:17-21 (“Still further, this invention directs itself to a hand held system having an ergonomic housing having first and second upper surface portions supporting a plurality of first surface controls.”); 2:22-32 (“The housing has **an first surface portion** . . . The hand held gaming and data entry system also includes a first set of pushbutton switch controls disposed **on the first surface portion** for operation by the user’s thumbs . . .”); 3:48-61 (“The hand grip portions 114, 116 also include a portion of the lower surface 105 which is ergonomically contoured to allow the fingers of the user to wrap around those hand grip portions...the housing 102 includes thumb operated

controls **104** disposed in the first upper surface portion **115a**). The features are labeled in the following annotated figure from *Willner*:



*Id.* at FIG 3.

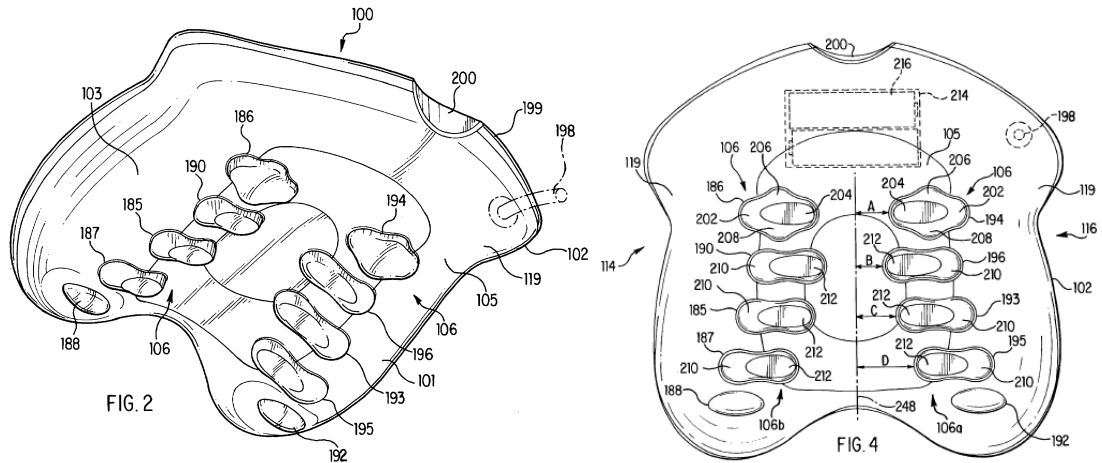
**[1.c]** wherein the controller is shaped to be held in the hand of a user such that the user's thumb is positioned to operate the front control; and

See limitation 1.b.

**[1.d]** a first back control and a second back control, each back control being located on the back of the controller and each back control including an elongate member that extends substantially the full distance between the top edge and the bottom edge and is inherently resilient and flexible.

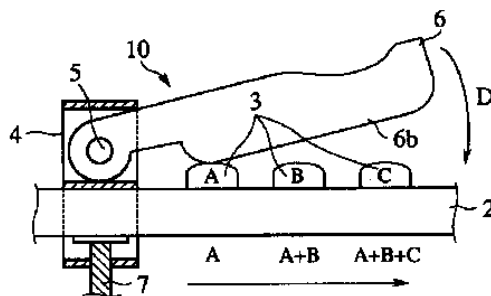
*Willner* teaches multiple switch controls located at the back of the controller.

See, e.g., **Ex. 1005**, *Willner* at FIGs. 2 and 4. These switch controls are arranged in rows on the back of the *Willner* controller—one row per side. *Id.*:

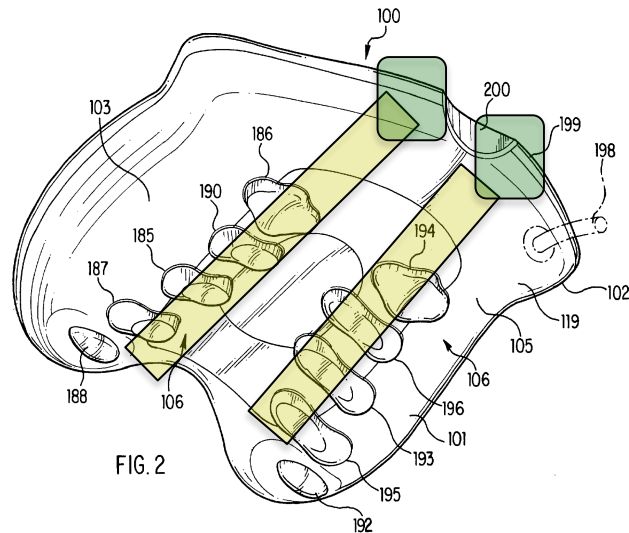


*Koji* teaches an elongate paddle member designed to be mounted on a video game controller and oriented to engage multiple switch controls in a row. *See Ex. 1006, Koji* at [0001]-[0007], [0024]-[0025], FIGs. 1-3, 7. The following FIG. 3 from *Koji* illustrates the components of a single elongate paddle member and mounting bracket:

【 3 】



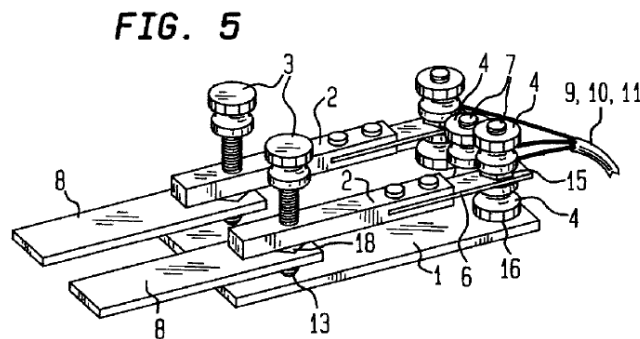
As discussed above, the combined system would be arranged as depicted in the following illustration:



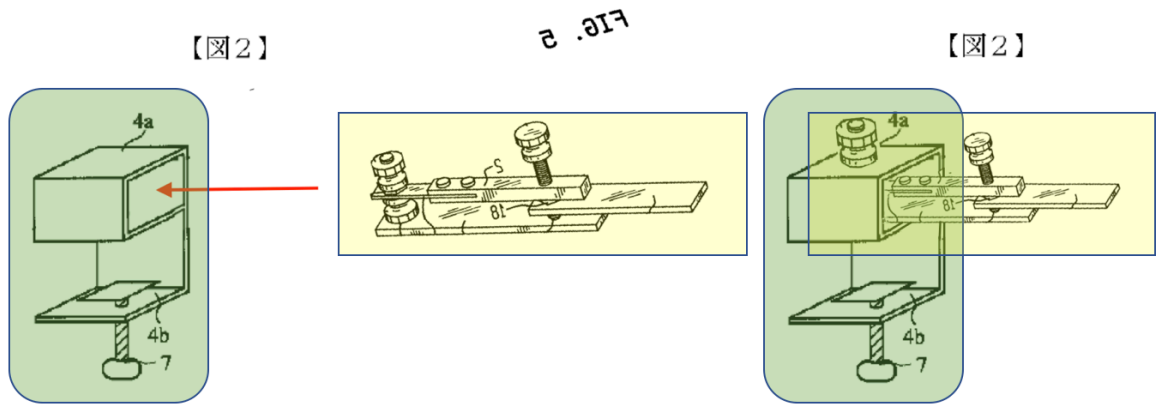
The yellow elongated boxes indicate where the paddle controls (reference number “6”) from *Koji* would be mounted on both sides of the *Willner* controller. *See Ex. 1008, Benden Decl.* at ¶14-16, 27; *see also Ex. 1006, Koji* at [0026]. Additionally, the green boxes indicate where the *Koji* mounting portion (reference number “4”) would be attached to the *Willner* controller using tightening screw (reference number “7”). *Id.* at ¶27.

Further, as shown in the annotated FIG. 2 from *Willner* above, when the elongate members of *Koji* are combined with *Willner*, they extend substantially the full distance between the top edge and bottom edge of the controller. One of skill in the art would recognize that this arrangement is necessary to enable the *Koji* paddle controls to cover (and engage when pressed) the full row of back switch controls. *Ex. 1008, Benden Decl.* at ¶33.

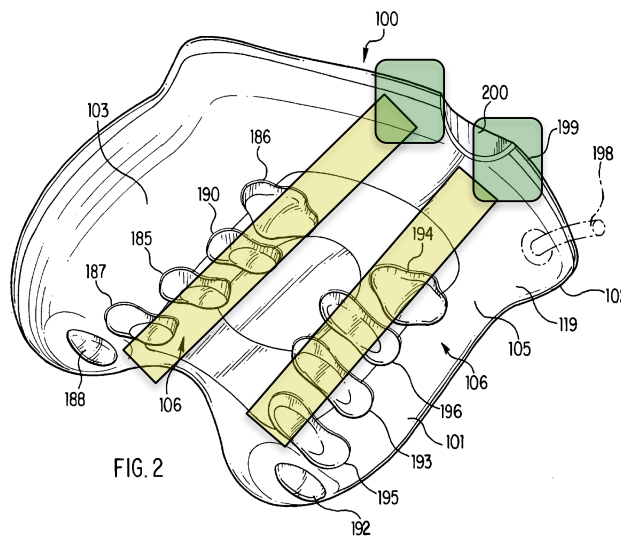
*Willner* as modified by *Koji* does not teach that the elongate members are inherently resilient and flexible. However, *Raymond* teaches an elongate member, which is inherently resilient and flexible such that it can be displaced by a user to activate a control function. See **Ex. 1007**, *Raymond* at 2:15-17 (“A twin lever key...with both levers hinged at their ends by **flat flexible metal strips**...”); 2:22-25 (“[S]aid levers being **activated...by vertical downward pressure from the fingers** and the release of said pressure from the index finger and the middle or third finger...”); (all emphasis added); see also *id.* at FIG 5:



As discussed above, the simpler paddle of *Raymond* is both more durable and less costly to produce, while remedying the disadvantages of the pivoting *Koji* paddle. See **Ex. 1008**, *Benden Decl.* at ¶31. One of ordinary skill in the art would easily recognize that the pivot paddle disclosed by *Koji* could easily be replaced with a fixed, but flexible paddle like the one described by *Raymond* to arrive at the following structure:



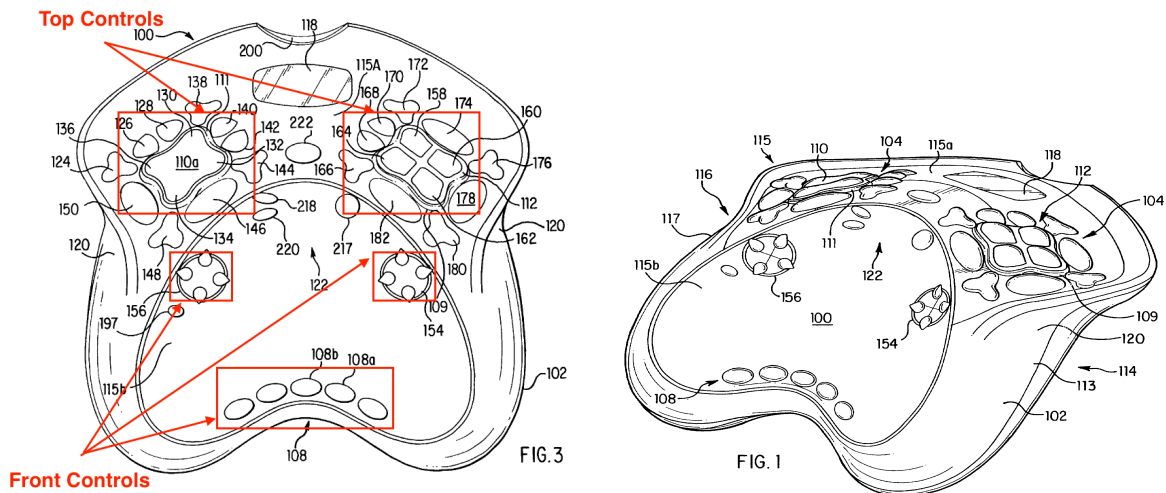
As discussed, the resulting *Koji-Raymond* paddle-mount accessory would be attached to the *Willner* controller as depicted in the following illustration:



iii. **Claim 2**

**2. The controller of claim 1, further having a top edge control located on the top edge of the controller and wherein the controller is shaped such that the user's index finger is positioned to operate the top edge control.**

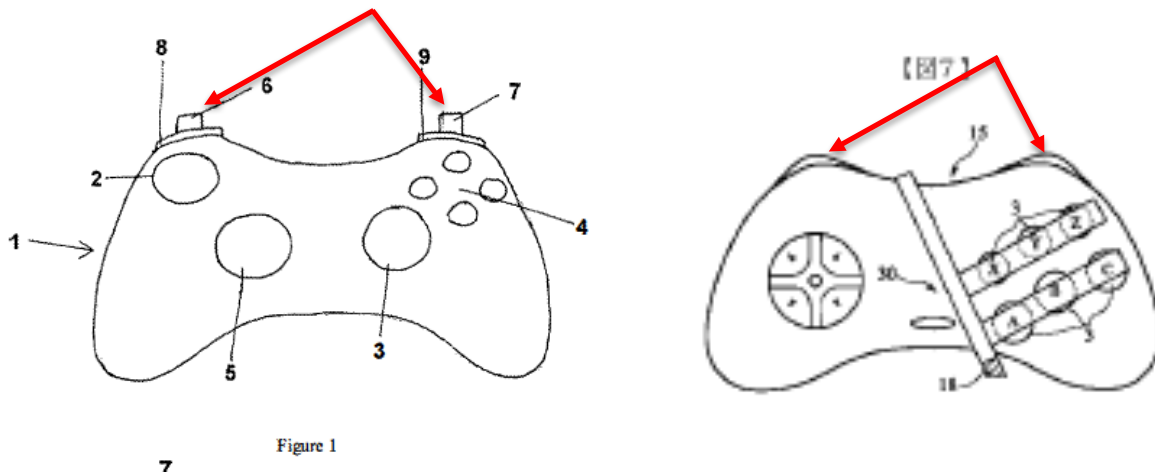
*Willner* teaches the standard video game controller features of a plurality of controls located on a front of the outer case, wherein the outer case is shaped to be held in both hands of a user such that the user's thumbs are positioned to operate controls located on the front of the outer case and the user's index fingers would naturally be used to operate controls on the top edge (beyond the ridge). *See Ex. 1005, Willner* at 3:48-61 (The hand grip portions **114**, **116** also include a portion of the lower surface **105** which is ergonomically contoured to allow the fingers of the user to wrap around those hand grip portions...the housing **102** includes thumb operated controls **104** disposed in the first upper surface portion **115a**) ; *see also Ex. 1008, Benden Decl.* at ¶¶14-16. The features are labeled in the following annotated figure from *Willner*:



**Ex. 1005**, *Willner* at FIG 3A. One of ordinary skill in the art would recognize that the addition of the *Koji* accessory would extend the functionality of the *Willner* controller, enabling the user to operate each back button only using the middle fingers, rather than both index and middle fingers. *See Ex. 1008, Benden Decl.* ¶¶14-16, 28. The now unused index fingers would then be able to operate the top controls located on the first upper surface portion, or top portion, of the *Willner* controller. *Id.* A person of ordinary skill in the art would be motivated to combine the art in this way because the index fingers would more readily reach the top controls, eliminating the need to shift the controller in a user's hands to allow the thumbs to reach both upper surface portions. *Id.* at ¶28. This new index finger operability is a direct result of the teachings of *Koji*, requiring no undue experimentation. *Id.*

To the extent the *Willner* controller is deemed to not include “controls located on the top of the outer case,” a person of ordinary skill in the art would further recognize that as a result of the increased operability of the index fingers, the *Willner* controller could be further modified to include top-mounted controls on a top surface. *See id.* at ¶¶14-16, 28. Top-mounted controls on a top surface of a video game controller, operated by a user's index finger, were well known within the art, as depicted by *Koji* and Applicant Admitted prior art in the annotated figures below:





See **Ex. 1001**, '525 Patent at Fig. 1; see also **Ex. 1006**, *Koji* at FIG 7. The *Willner* controller could easily be modified to include a larger top edge with top edge controls, as depicted in *Koji* and the '525 Patent. See **Ex. 1008**, *Benden Decl.* at ¶¶14-16. These top edge controls could either be in place of or, in addition to, the upper front surface portion, and would be operated with the now free index fingers. *Id.* at ¶¶14-16, 28. A person of ordinary skill in the art would be motivated to add a top edge to the current configuration because of the increase in the amount of controls that could be used. *Id.* On the other hand, a person of ordinary skill in the art may choose to replace the top surface controls because a dedicated top edge with top edge controls would increase comfort and efficiency for the user. *Id.* Such a modification would merely combine a known videogame control button configuration with a known videogame controller to produce expected results. *Id.*

**iv. Claim 3**

**3. The controller of claim 2, wherein at least one of the back controls replicates the function of one or more of the top edge control and the front control.**

*Willner* discloses that the functions of the back buttons should be programmable to allow the user to select assignments to suit their own taste. **Ex. 1005**, *Willner* at 10:24-30. Accordingly, a user operating the controller disclosed in *Willner*, as modified by *Koji+Raymond*, would be able to program the right side back buttons associated with the first back control to replicate functions also available via the front or top controls, suitable to the user's needs. *See Ex. 1008*, *Benden Decl.* at ¶32.

**v. Claim 4**

**4. The controller of claim 2, wherein at least one of the back controls has functions in addition to the top edge control and the front control.**

*Willner* as modified by *Koji+Raymond* teaches back controls that have functions in addition to the top edge control and the front control. Specifically, *Willner* teaches that the back surface controls **106** each generate independent characters. **Ex. 1005**, *Willner* at 6:44-7:15; 7:22-36. Moreover, *Willner* clearly discloses that the functions of the back buttons should be programmable to allow the user to select assignments to suit their own taste. *Id.* at 10:24-30. Accordingly, a user operating the controller disclosed in *Willner*, as modified by *Koji+Raymond*, would be able to program the right side back buttons associated with the first back

control to provide a first function and the left side back buttons associated with the second back control to provide a second function, suitable to the user's needs. *See Ex. 1008, Benden Decl.* at ¶32.

**vi. Claim 5**

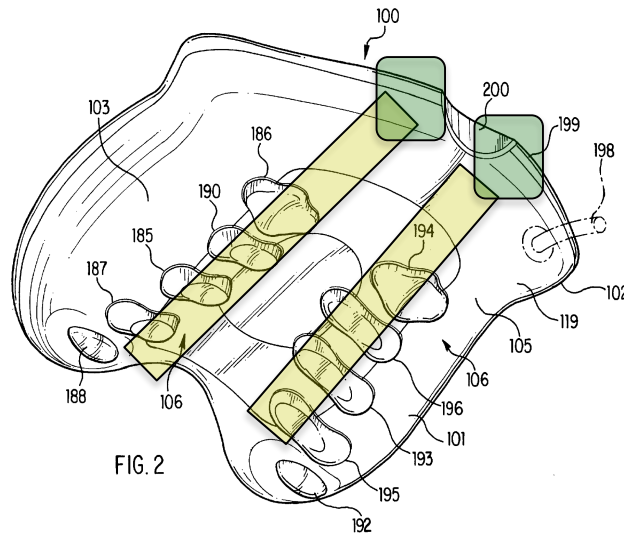
***5. The controller of claim 2, wherein the top edge is substantially perpendicular to the front.***

As discussed with respect to Claim 2 above, it would be obvious to modify *Willner* to include a top edge having top edge controls as taught by *Koji* and as was well known in the art at the time of the invention. Moreover, a person of ordinary skill in the art would recognize that the top edge of *Koji* is substantially perpendicular to the front of the controller. *See Ex. 1008, Benden Decl.* at ¶¶14-16, 28. In making this modification to *Willner*, a person of ordinary skill in the art would be motivated to design the top edge as substantially perpendicular to the front in order to better accommodate the shape of a user's hands. By having a top edge substantially perpendicular to the front, a user's hands would more comfortably be able to reach the front buttons, top edge buttons, and back surface paddles. *See Ex. 1008, Benden Decl.* at ¶28.

**vii. Claim 6**

**6. The controller of claim 1, wherein each of the back controls is positioned to be operated by a middle finger of a user.**

*Willner* as modified by *Koji+Raymond* teaches back controls that are positioned to be operated by a middle finger of a user. Specifically, *Willner* teaches that the controller is shaped such that, when held in both hands of the user, the user's fingers, of each hand rest on the back surface buttons. **Ex. 1005**, *Willner* at 12:21-25 (“While the user has both thumbs positioned on the respective multidirectional switch **110** and multiple switch grouping **112**, and the fingers of each hand respectively on the switch pushbuttons **194, 196, 193, 195, 186, 190, 185** and **187**. . .”). Because the back controls are positioned to be operated by all of the user's fingers, some of the back controls are necessarily positioned to be operated by the middle finger of the user. Further, as shown in the annotated FIG. 2 (reproduced below), when modified by *Koji+Raymond*, the elongate member of the back control would be positioned in exactly the same location as *Willner*'s back controls:

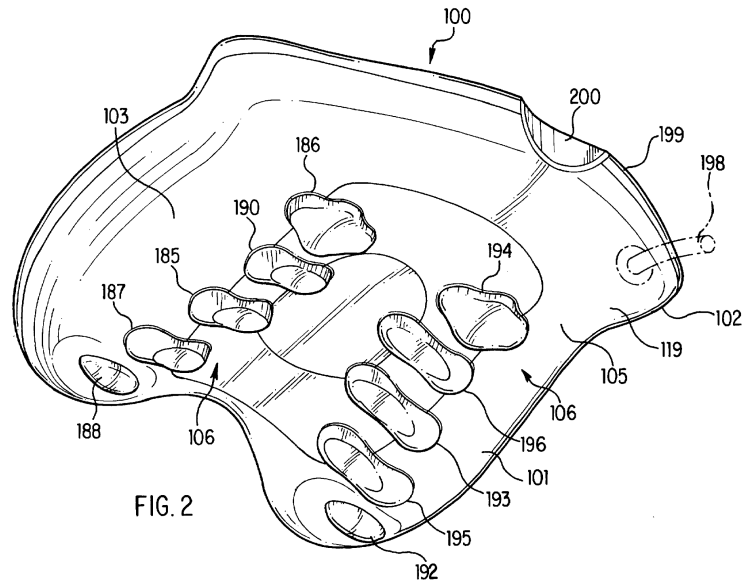


Therefore, *Willner* as modified by *Koji+Raymond* likewise teaches a back control positioned to be operated by a user's middle finger.

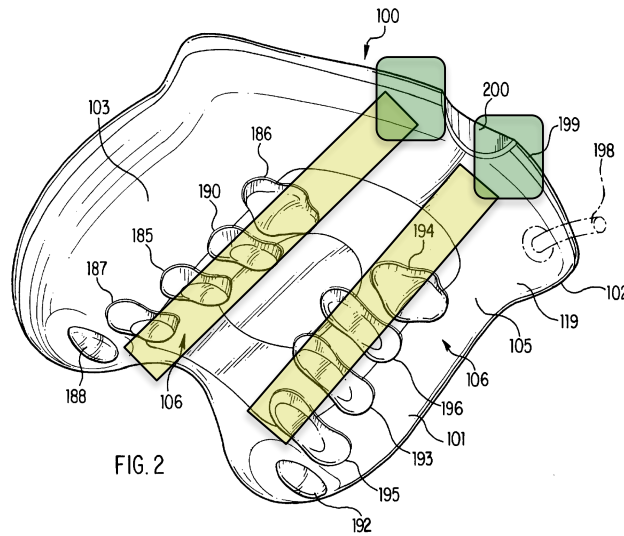
**viii. Claim 7**

**7. The controller of claim 1, wherein each elongate member is mounted within a recess located in the case of the controller.**

The '525 Patent does not explicitly define "recess." However, the PTAB, in its Final Written Decision for IPR2016-00948, concluded that "the claims require the back of the outer case of the controller to include an indentation." **Ex. 1012**, IPR2016-00948, at 18 (P.T.A.B. Sept. 22, 2017). Applying this definition, *Willner* discloses that the back surface of the controller is curved, which can be seen in FIG. 2 as the shadowed inner circular-shaped regions. **Ex. 1005**, *Willner* at 12:29-31 ("The **arcuate surfaces of the lower surface 105** also contributes to the ability of a user to support the housing **102** while still making full use of the switch pushbuttons."):



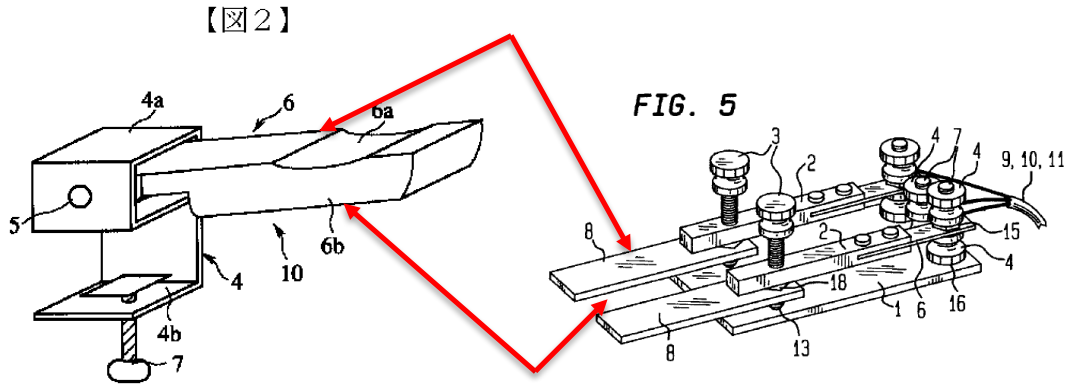
As shown in FIG. 2 above, the pushbuttons of *Willner* are located within the inner-circular shaped regions of the back face of the controller, and are therefore positioned in the recess located in the back of the *Willner* controller. Further, because the elongate paddle controls of *Koji+Raymond* are positioned to be engage the pushbuttons of *Willner*, the elongate paddle controls of the *Koji-Raymond* modified *Willner* controller are likewise positioned in the recess of the back of the controller:



**ix. Claim 8**

**8. The controller of claim 7, wherein each elongate member comprises an outermost surface which is disposed in close proximity to the outermost surface of the controller such that a user's finger may be received in said respective recess.**

The elongate members of *Willner*, as modified by *Koji* and *Raymond* have an outermost surface which is disposed in close proximity to the outermost surface of the controller, such that a user's finger may be received in said respective recess. As an initial matter, the elongate members of *Koji* and *Raymond* have an outermost surface, as shown in the annotated Figures below:



Moreover, as discussed with respect to Claim 14, *infra*, each elongate member is in registry with the back switch buttons disclosed by *Willner*. Accordingly, because the elongate members are in registry with the controller push buttons, the outermost surfaces are in close proximity to the outermost surface of the controller. Further, as discussed *supra* with regards to Claims 6 and 7, the back controls are within a recess in the back surface such that they are operable by a user's middle fingers, and accordingly are also positioned such that the user's fingers may be received in the recess.

To the extent Patent Owner argues the modified controller does not include paddle controls sufficiently close to the back of the controller body such that a user's fingers could be received in the recess, it would have been obvious to arrange the combination in this way. **Ex. 1008**, *Benden Decl.* at ¶¶14-16, 33 (concluding it would have been obvious to position the modified paddles close in proximity to the controller back). Such a configuration is nothing more than a



common sense design choice that would result in a more streamlined and less bulky controller. *Id.* at ¶33.

**x. Claim 9**

**9. The controller of claim 1, wherein each elongate member has a thickness between about 1mm and 10 mm.**

The additional controls disclosed in *Koji* and *Raymond* each include an elongate member, as previously discussed. Although, *Raymond* does not expressly disclose the specific thickness of these paddles, one of ordinary skill in the art would recognize that the elongate paddles shown in *Raymond* have a thickness between 1mm and 3mm thick. **Ex. 1008**, *Benden Decl.* at ¶30 (concluding that the depicted paddles are between 1mm and 3mm thick). This thickness would allow the paddle members enough flexibility to be comfortably operated with a user's index finger or middle finger. *Id.*; *see also, e.g., Ex. 1007, Raymond* at 2:22-25 (“[S]aid levers being **activated...by vertical downward pressure from the fingers** and the release of said pressure from the index finger and the middle or third finger...”) (emphasis added).

**xi. Claim 10**

**10. The controller of claim 1, wherein each elongate member has a thickness between about 1 mm and 5 mm.**

*See* Claim 9.

**xii. Claim 11**

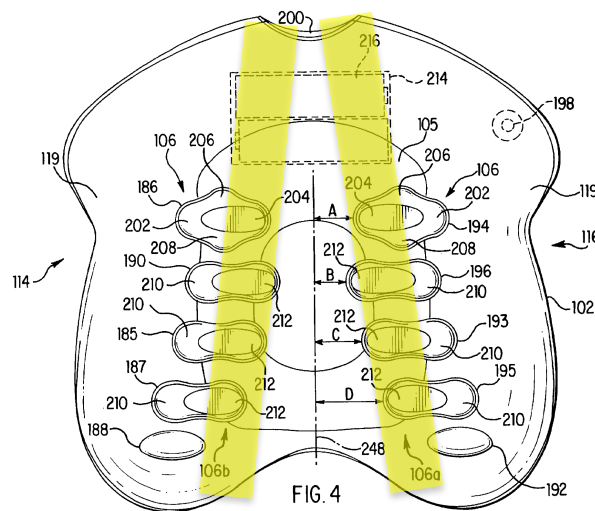
**11. The controller of claim 1, wherein each elongate member has a thickness between about 1 mm and 3 mm.**

See Claim 9.

**xiii. Claim 13**

**13. The controller of claim 1, wherein the elongate members converge towards the front end of the controller with respect to one another.**

As illustrated in the annotated FIG. 4 from *Willner* shown below, when the *Koji* paddles are mounted over the two underside rows of switch mechanisms, the paddles will converge towards one another in a direction pointing from the bottom edge to the top edge because this is how the row of switches in *Willner* are oriented:



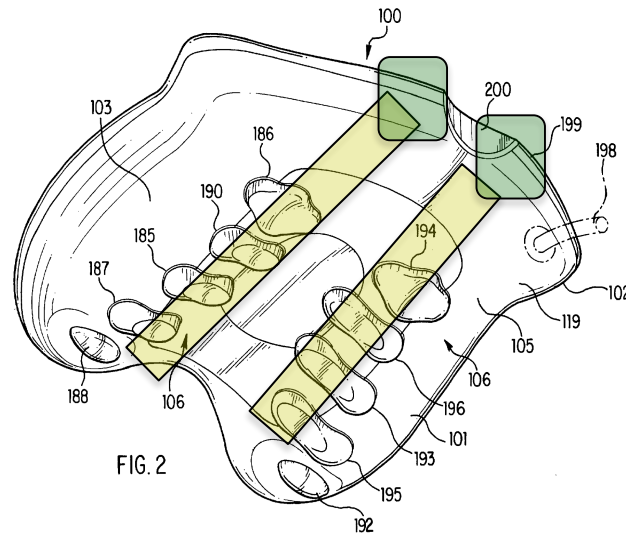
Moreover, the exact layout of the *Koji+Raymond* back controls is a simple matter of design choice. Because the *Koji+Raymond* back paddles are mountable, a

person of ordinary skill in the art would recognize that the back controls layout would be determined by the controller it is being installed on. **Ex. 1008**, *Benden Decl.* at ¶33.

**xiv. Claim 14**

***14. The controller of claim 1, wherein a portion of at least one of the first back control and the second back control is in registry with a switch mechanism disposed within the controller, such that displacement of the at least one back control activates the switch mechanism.***

*Willner* discloses rows of switch mechanisms that are displaced in the underside of its controller, and protrude out of the case. **Ex. 1005**, *Willner* at 6:44-50 (“The finger operated controls **106, 106'** are divided into one set of switch operators **194, 196, 193** and **195 . . .** which define the left hand operated switch operators **106a . . .**, while the switch operators **186, 190, 185** and **187 . . .** define the right hand operated switch operators **106 b.**”); *see also id.* at FIG. 4. As described above, the proposed combination mounts two *Koji* paddle accessories along these rows of switch mechanisms as illustrated below, which results in a configuration where both *Koji* paddle controls contact their respective switch mechanisms when engaged:



**xv. Claim 15**

**15.** *The controller of claim 1, wherein a switch mechanism is disposed between each of the elongate members and an outer surface of the back of the controller.*

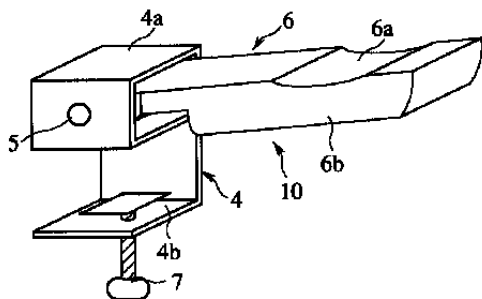
See Claim 14.

**xvi. Claim 16**

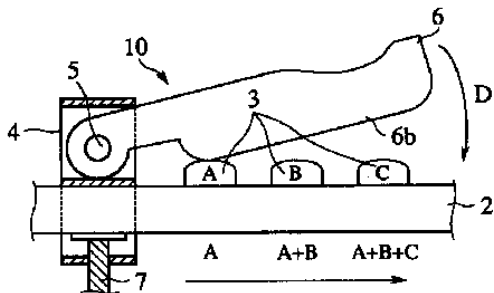
**16.** *The controller of claim 1, wherein at least one of the back controls is a paddle lever.*

As set forth with respect to limitation 1.d, *Koji* teaches an elongate paddle member designed to be mounted on a video game controller and oriented to engage multiple switch controls in a row. See **Ex. 1006**, *Koji* at [0001]-[0007], [0023]-[0025], FIGs. 2-3, 7:

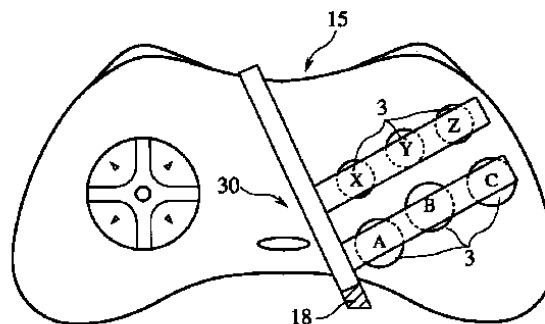
【図2】



【図3】



【図7】



Additionally, the *Koji* elongate members, as modified by *Raymond*, are also

paddle levers.

FIG. 5

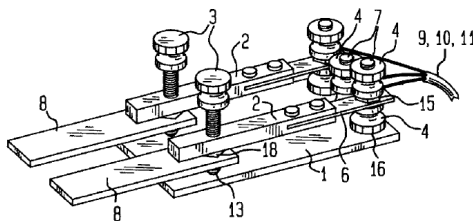
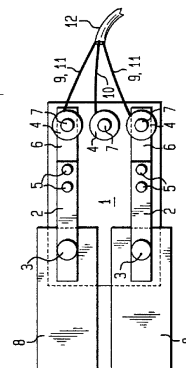


FIG. 2



Ex. 1007, *Raymond* at FIG 5 and FIG 2. As discussed above, the paddle levers of *Raymond* would replace the paddle levers of *Koji* in the proposed combination.

**xvii. Claim 17**

**17. The controller of claim 1, wherein at least one of the back controls is substantially parallel to the front of the controller.**

*Willner* as modified by *Koji-Raymond* teaches back controls that are substantially parallel to the front of the controller. As already discussed, the back controls are placed to be in registry with the back push buttons. *Supra* Claim 14. Accordingly, the back controls would conform to the shape of the *Willner* controller. **Ex. 1008**, *Benden Decl.* at ¶¶14-16, 33. As shown in the following annotated FIG. 5, paddles that follow the profile of the bottom control switches would be substantially parallel to the front surface of the controller:

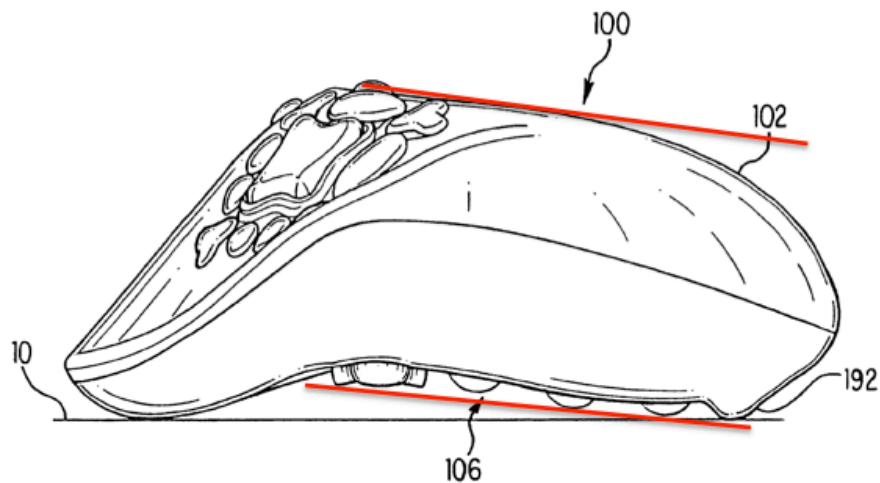
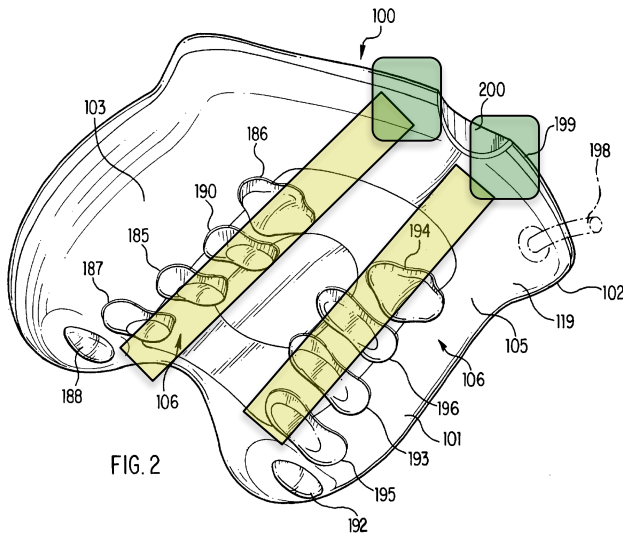


FIG.5

**xviii. Claim 19**

**19. The controller of claim 1, wherein at least one of the back controls is formed separate from the outer case of the controller.**

As set forth with respect to limitation 1.d, *Koji* as modified by *Raymond* teaches a separate elongate paddle member designed to be mounted on a video game controller and oriented to engage multiple switch controls in a row. See **Ex. 1006**, *Koji* at [0001]-[0007], [0023]-[0025], FIGs. 1-3, 6, 7. Additionally, the proposed modification of *Willner* by *Koji+Raymond* requires that the elongate paddle members of *Koji+Raymond* be mounted to the controller of *Willner*, as shown in annotated FIG. 2:



**xix. Claim 20**

**[20.pre] A hand held controller for a game console comprising:**

*See* limitation 1.pre.

*[20.a] an outer case comprising a front, a back, a top edge, and a bottom edge, wherein the back of the controller is opposite the front of the controller and the top edge is opposite the bottom edge;*

See limitation 1.a.

*[20.b] a front control located on the front of the controller, wherein the controller is shaped to be held in the hand of a user such that the user's thumb is positioned to operate the front control; and*

See limitation 1.b and 1.c.

*[20.c] a first back control and a second back control, each back control being located on the back of the controller and each back control including an elongate member that extends substantially the full distance between the top edge and the bottom edge.*

See limitation 1.d.

## **V. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(A)(1)**

Petitioner provides the following mandatory notices as part of this Petition.

### **A. Real Party-In-Interest**

The Petitioner is the real party-in-interest. 37 C.F.R. § 42.8(b)(1).

### **B. Related Matters**

The '525 Patent is presently the subject of a patent infringement lawsuit filed by Patent Owner against Petitioner in the District Court for the Northern District of Georgia (Case No. 1:16-cv-04110-TWT) on November 2, 2016. Patent Owner also asserted the '525 Patent against Valve Corporation in the District Court for the Northern District of Georgia on December 3, 2015, which has since



Petition for *Inter Partes* Review of U.S. Patent 8,641,525

been transferred to the District Court for the Western District of Washington (Case No. 2:17-cv-01182-TSZ). The '525 Patent is also the subject of two *Inter Partes* Review proceedings—IPR2016-00948 and IPR2017-00136.

**C. Lead and Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3-4)**

Petitioner provides the following designation and service information for lead and back-up counsel.

<b>Lead Counsel</b>	<b>Back-Up Counsel</b>
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**D. Payment of Fees Under 37 C.F.R. § 42.103**

The undersigned submitted payment by deposit account with the filing of this Petition authorizing the Office to charge fees required under 37 C.F.R. § 42.103(a) and 42.15(a).

**VI. CONCLUSION**

For the forgoing reasons, Petitioner respectfully requests *inter partes* review of claims 1-11 and 13-20 of the '525 Patent.

Petition for *Inter Partes* Review of U.S. Patent 8,641,525

Respectfully submitted,

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Petition for *Inter Partes* Review of U.S. Patent 8,641,525

**APPENDIX OF EXHIBITS**

<b>Exhibit 1001</b>	U.S. Patent No. 8,641,525
<b>Exhibit 1002</b>	File History of U.S. Patent No. 8,641,525
<b>Exhibit 1003</b>	U.S. Patent Publication No. 2010/0298053 to David Kotkin
<b>Exhibit 1004</b>	U.S. Provisional Patent Application No. 61/179,551 to David Kotkin
<b>Exhibit 1005</b>	U.S. Patent No. 6,760,013 to Michael A. Willner, et al.
<b>Exhibit 1006</b>	Japanese Patent Publication JPH1020951 to Tsuchiya Koji (Certified English Translation)
<b>Exhibit 1007</b>	U.S. Patent No. 5,773,769 to Christopher W. Raymond
<b>Exhibit 1008</b>	Declaration of Mark Benden
<b>Exhibit 1009</b>	Curriculum Vitae of Mark Benden
<b>Exhibit 1010</b>	Koji Affidavit
<b>Exhibit 1011</b>	Japanese Patent Publication JPH1020951 to Tsuchiya Koji (Original Japanese Patent)
<b>Exhibit 1012</b>	Claim Chart Mapping Kotkin Claims to '551 Provisional
<b>Exhibit 1013</b>	Dark Watcher, <i>History of the Game Controller</i> , Video Game Console Library, <a href="https://web.archive.org/web/20081021044659/http://www.videogameconsolelibrary.com/art-controller.htm">https://web.archive.org/web/20081021044659/http://www.videogameconsolelibrary.com/art-controller.htm</a>

Petition for *Inter Partes* Review of U.S. Patent 8,641,525

**CERTIFICATION OF WORD COUNT**

The undersigned certifies pursuant to 37 C.F.R. §42.24 that the foregoing Petition for *Inter Partes* Review, excluding any table of contents, mandatory notices under 37 C.F.R. §42.8, certificates of service or word count, or appendix of exhibits, contains 11,881 words according to the word-processing program used to prepare this document (Microsoft Word).

Dated: January 3, 2018

BY: Paul R. Hart  
Paul R. Hart, Reg. No. 59,646

*ATTORNEY FOR PETITIONER*

Petition for *Inter Partes* Review of U.S. Patent 8,641,525

**CERTIFICATE OF SERVICE ON PATENT OWNER**  
**UNDER 37 C.F.R. § 42.105**

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105, the undersigned certifies that on January 3, 2018, a complete and entire copy of this Petition for *Inter Partes* Review including exhibits was provided via Federal Express to the Patent Owner by serving the correspondence address of record for the '525 Patent as listed on PAIR:

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