

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD. AND SAMSUNG ELECTRONICS
AMERICA, INC.

Petitioners

v.

KP INNOVATIONS 2, LLC,

Patent Owner

Case No. IPR2025-00101

Patent 10,499,168

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,499,168**

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LIST OF EXHIBITS

Exhibit #	Description
EX1001	U.S. Patent No. 10,499,168, Robert Glen Klinefelter and Gregory A. Piccionelli, “System, Method, and Apparatus for Providing Interpretive Communication on a Network,” (“the ’168 Patent”), filed February 8, 2010, issued December 3, 2019.
EX1002	U.S. Provisional Patent Application 60/243,162, Robert Glenn Klinefelter and Gregory A. Piccionelli, “A System, Method, and Apparatus for Providing Interpretive Communication on a Network,” filed October 25, 2000.
EX1003	Prosecution History of the ’168 Patent.
EX1004	Declaration of Dr. Sandeep Chatterjee.
EX1005	Curriculum Vitae of Dr. Sandeep Chatterjee.
EX1006	U.S. Patent No. 5,808,663 to Ken Okaya, “Multimedia Carousel for Video Conferencing and Multimedia Presentation Applications,” (“ <i>Okaya</i> ”) filed January 21, 1997 and issued September 15, 1998.
EX1007	U.S. Patent No. 6,782,281 to Naokazu Nagasawa, “Folding Portable Telephone Apparatus,” (“ <i>Nagasawa</i> ”) filed November 3, 2000.
EX1008	PCT International Patent Publication No. WO 01/31893 to Esa Harma, “Mobile Phone,” (“ <i>Harma</i> ”) filed October 25, 2000 and published May 3, 2001.
EX1009	KP2’s Infringement Contentions (served September 24, 2024), <i>KP2 Innovations 2, LLC, v. Samsung Electronics Co., Ltd. et al.</i> , No. 1:24-cv-00170.
EX1010	UK Patent Application Publication No 2,358,985 to Tetsuya Kubo et al., “Dual display folding portable telephone,” filed November 1, 2000 and published August 8, 2001.
EX1011	Claim listing for Challenged Claims of U.S. Patent No. 10,499,168.
EX1012	Complaint, <i>KP2 Innovations 2, LLC, v. Samsung Electronics Co., Ltd. et al.</i> , No. 1:24-cv-00170 (W.D. Tex. Feb. 19, 2024).
EX1013	Scheduling Order, <i>KP2 Innovations 2, LLC, v. Samsung Electronics Co., Ltd. et al.</i> , Dkt. No. 27, No. 1:24-cv-00170 (W.D. Tex. Feb. 19, 2024).
EX1014	“Access” definition. The American Heritage® College Dictionary (2000).
EX1015	“Mobile telephone” definition. <i>Telephony’s Dictionary</i> (2 nd Ed. 1986).
EX1016	“Mobile phone” definition. <i>The Focal Illustrated Dictionary of</i>

	<i>Telecommunications</i> (1999).
EX1017	Bob Summers, <i>Official Microsoft NetMeeting Book</i> , Microsoft Press (1998).
EX1018	Norman E. Sondak, Eileen M. Sondak, “Video Conferencing: The Next Wave for International Business Communication,” <i>Ann. Conf. on Language and Comm. For World Business and the Professions</i> (April 6-8, 1995).
EX1019	Certified Translation of Japanese Patent Publication JPH11298869, Kazuhiro Takahasi et al., “Communication Terminal and Videophone Device with Said Terminal,” filed April 14, 1998 and published October 29, 1999.
EX1020	Dell™ Latitude™ CPx H-Series/J-Series User’s Guide, Initial Release November 15, 1999, Last Revision August 28, 2000, available at https://www.dell.com/support/home/en-us/product-support/product/latitude-cpx-h/docs .
EX1021	“PC Card Technology Primer,” Personal Computer Memory Card International Association, October 22, 2000, available at https://web.archive.org/web/20001022131519/http://www.pcmcia.org/pccard.htm .
EX1022	“The Zoomed Video Port for PC Cards,” Personal Computer Memory Card International Association, July 8, 2000, available at https://web.archive.org/web/20000708043950/http://www.pcmcia.org/papers/zv.htm .
EX1023	David G. Messerschmitt, “Convergence of Telecommunications with Computing,” <i>Technology in Society</i> , Vol. 18, No. 3, pp. 285-86 (1996).
EX1024	Mirza M. Luqman et al., “Globalization of Wireless Telephone,” Portland International Conference on Management of Engineering and Technology, July 29, 2001-August 2, 2001.
EX1025	“System Specifications: Latitude CPx,” www.dell.com (archived March 1, 2000), available at https://web.archive.org/web/20000301021538/http://www.dell.com/us/en/bsd/products/spec_latit_cpx_notebooks.htm .

CLAIM LISTING FOR U.S. PATENT NO. 10,499,168

Claim Number	Claim Element
18[p]	18. A communication service device operable with a communication network, comprising:
18[a]	at least one user communication device configured to receive and transmit information over the communication network;
18[b]	the at least one user communication device comprising a housing having a first side and a second side,
18[c]	at least one first input device and first display device configured to allow the at least one user to input and output visual information wherein the at least one first input device and first display device resides on the first side of the housing,
18[d]	at least one second input device configured to input visual information wherein the at least one second input device resides on the second side of the housing;
18[e]	wherein the first and second input devices and first display devices are carried by the housing in an orientation to allow the at least one user to access the at least one first input device and first display device from the first side of the housing at the same time as the at least one second input device from the second side of the housing.
19[a]	19. The communication service device as claimed in claim 18, wherein the first side of the housing and the second side of the housing face mutually opposite directions.

20[a]	20. The communication services device as claimed in claim 18, wherein the first input device comprises a first camera, and where the second input device comprises a second camera.
21[a]	21. The communication services device as claimed in claim 19 includes, a second display device residing on the second side of the housing.

I. INTRODUCTION

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc., (collectively “Petitioners”) respectfully submit this Petition for *inter partes* review of Claims 18-21 (the “Challenged Claims”) of U.S. Patent No. 10,499,168 (the “’168 Patent”).

While the ’168 Patent focuses on providing access to human interpreters over a network, Challenged Claims 18-21 are directed to a two-sided communication device. Claim 18 is directed to a communication device that includes a housing with a first and second side, where “at least one first input device and first display device resides on the first side” and “at least one second input device resides on the second side of the housing.” The claimed input devices and display device must be “carried by the housing in an orientation to allow the at least one user to access the at least one first input device and first display device ... ***at the same time*** as the at least one second input device.” Claim 19 adds the requirement that the first and second sides “face mutually opposite directions;” Claim 20 specifies that the “first input device” and “second input device” are cameras; and Claim 21 adds a “second display device” on the second side of the housing.

As shown in this Petition, such devices were hardly novel as of the ’168 Patent’s priority date. EX1006; EX1007; EX1008. While prosecution focused on prior art in the field of interpretation services, consistent with the scope of

unchallenged Claims 1-17, the Examiner did not locate or consider the prior art relied on in this Petition was before the Examiner during prosecution.

This Petition shows that communication devices having two sides with multiple cameras and one or more displays were well known and obvious. Claims 18-21 represent no novel or non-obvious advancements over the prior art. Petitioners respectfully request institution of *inter partes* review and a finding that the Challenged Claims are unpatentable.

II. MANDATORY NOTICES UNDER 37 C.F.R. §42.8(a)(1)

A. Real Party-in-Interest under 37 C.F.R. §42.8(b)(1)

The real parties in interest are Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. No other parties exercised or could have exercised control over this Petition; no other parties funded or directed this Petition. *See* Office Patent Trial Practice Guide, 77 Fed. Reg. 48759-60.

B. Related Matters under 37 C.F.R. §42.8(b)(2)

KP Innovations 2, LLC (“KP2”) has asserted the ’168 Patent against Petitioners in a co-pending litigation, *KP Innovations 2, LLC v. Samsung Electronics Co., Ltd.*, Case No. 1-24-cv-00170-DII (W.D. Tex.) (“KP2 Litigation”). The Original Complaint in that litigation was filed on February 19, 2024. EX1012.

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

Petitioners provide the following designation of counsel.

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D. Service Information under 37 C.F.R. §42.8(b)(4)

A copy of this entire Petition, including all Exhibits, are being served by
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A Power of Attorney is filed concurrently herewith under 37 C.F.R. §42.10(b).

III. REQUIREMENTS UNDER 37 C.F.R. §42.104

A. Grounds for Standing

Petitioners certify the '168 Patent is eligible for IPR and Petitioners are not barred or otherwise estopped.

B. Priority Date

The '168 Patent claims priority to provisional application 60/243,162, filed

October 25, 2000. Because the invention in Claims 18-21 is not disclosed in the provisional application, the Challenged Claims are not entitled to the provisional filing date and should be afforded a priority date no earlier than ***October 25, 2001***. See EX1002.

The provisional application describes an interpretation-services system using conventional client-server devices. *Id.*, Fig 2; EX1004, ¶51. There is no description whatsoever of the device of Claims 18-21, having displays and camera(s) on different sides, let alone in “an orientation to allow the at least one user to access the at least one first input device and first display device from the first side of the housing at the same time as the at least one second input device from the second side of the housing” as in Claim 18. EX1004, ¶¶50-53. Because the provisional application fails to disclose Claims 18-21, the ’168 Patent should not obtain the provisional application’s priority date. EX1004, ¶53.

C. Prior Art

Exhibit 1006 - U.S. Patent 5,808,663 (“*Okaya*”) was filed January 21, 1997, and issued on September 15, 1998. *Okaya* qualifies as prior art under at least pre-AIA 35 U.S.C. §102(b) regardless of whether the ’168 Patent is entitled to its provisional application’s priority date.

Exhibit 1007 - U.S. Patent 6,782,281 (“*Nagasawa*”) was filed November 3, 2000, and issued on August 24, 2004. *Nagasawa* qualifies as prior art under at least

pre-AIA 35 U.S.C. §102(e) at least because the '168 Patent is not entitled to its provisional application's priority date.

Exhibit 1008 - WO 01/31893 ("*Harma*") has an international filing date of October 25, 2000 and an international publication date of May 3, 2001. *Harma* qualifies as prior art under at least §§102(a) and 102(e) at least because it was published in English, identified the U.S. as a designated state, and further because the '168 Patent is not entitled to its provisional application's priority date. *See* EX1008, items (26), (81).

D. Challenged Claims and Relief Requested

Petitioners challenge '168 Patent Claims 18-21 as follows:

Ground	Claims	Basis (35 U.S.C. §)	Prior Art
1 & 2	18-21	102 & 103	<i>Okaya</i>
3	18-20	103	<i>Harma</i>
4	18-21	103	<i>Nagasawa, Harma</i>

EX1004, ¶19; EX1011 (listing challenged claims).

E. Institution is Proper under §314(a)

The factors in *General Plastic Industrial v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (P.T.A.B. Sept. 6, 2017) favor institution. This is the first and only petition challenging the '168 Patent. The factors in *Apple v. Fintiv*, IPR2020-00019, Paper 11, 6 (P.T.A.B. Mar. 20, 2020) ("*Fintiv-I*") (precedential) also favor institution. The merits of this Petition are particularly strong, with

compelling art and arguments. Further, Petitioners filed this petition quickly, within nine months of KP2 filing its complaint in the Western District of Texas. EX1012. That litigation is just beginning. KP2 has only recently served infringement contentions, and Samsung has yet to serve invalidity contentions or initial document disclosures. EX1009. Discovery does not open until May 2025. EX1013. Because that litigation is still in its infancy, the *Fintiv* factors favor institution.

A stay motion has not yet been filed in the KP2 Litigation, but Petitioners intend to file one. The Board has treated related factors as neutral after declining to speculate on the outcome of a stay motion. *See, e.g., HP v. Slingshot Printing*, IPR2020-01084, Paper 13, 9 (P.T.A.B. Jan. 14, 2021). Even if a stay is not granted, this proceeding will conclude long before trial, currently set for September 2026. EX1013, p.7.

“[I]t is often reasonable for a petitioner to wait to file its petition until it learns which claims are being asserted against it in the parallel proceeding.” *Fintiv* at 11. Here, Petitioners promptly filed this Petition against’168 Patent Claims 18-21 within six weeks of receiving infringement contentions. This “diligent” filing favors institution. *See, e.g., Corning v. Dali Wireless*, IPR2021-00762, Paper 8, 9-10 (P.T.A.B. October 13, 2021) (crediting petitioner’s diligent filing approximately four months after receiving infringement contentions). Due to Petitioners’ diligence,

it would be premature to argue now regarding the timing of milestones in this proceeding versus the KP2 Litigation.

F. Institution is Proper under §325(d)

The Board should not exercise its discretion under 35 U.S.C. §325(d). The prior art herein was not of record before the Examiner and is materially different from and not cumulative to the prior art during examination. *See, e.g.*, EX1003, 182-83. Because the new references present a compelling case for invalidity of the Challenged Claims and were not previously considered by the Examiner, the Board should decline to exercise its discretion under §325(d).

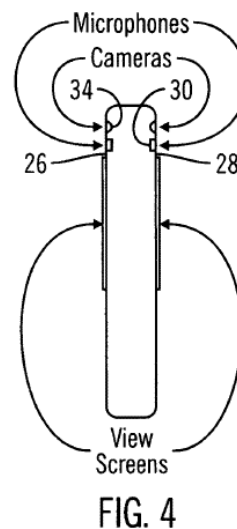
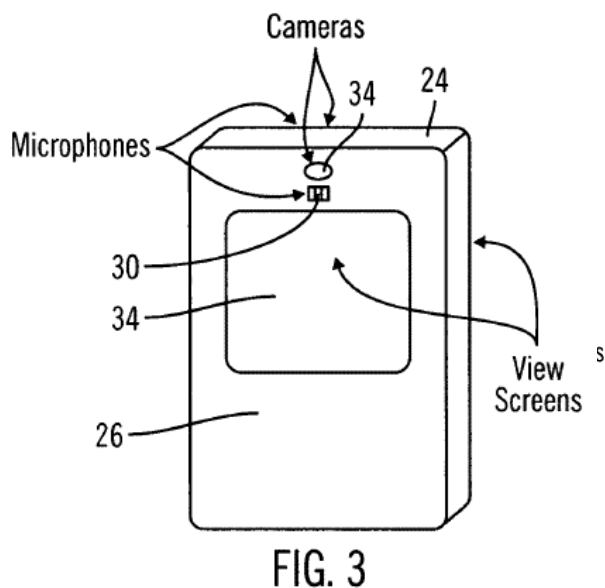
IV. OVERVIEW OF THE '168 PATENT

The '168 Patent relates to systems for providing “real-time or near real-time interpreting services for utilization on a network.” EX1001, 1:16-18. Waiting for a live interpreter, such as “in a hospital,” “may take two hours or more to locate and transport a translator or interpreter to the medical facility.” *Id.*, 2:30-33. “Although live interpreting is advantageous, it fails” to provide “an interpreter in a timely and cost-efficient manner.” *Id.*, 2:20-24. Accordingly, the patent provides “interpretive and/or translatable providers via a network.” *Id.*, 3:21-31.

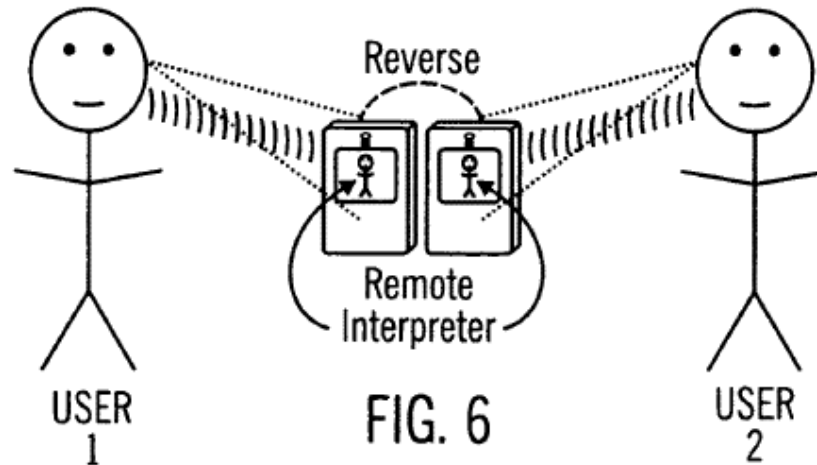
Although embodiments of the alleged invention may be performed using a single computer over a network to access such interpreting services, the Challenged Claims relate to embodiments in which “a plurality of user computers can be

contained within *a single housing* system.” EX1001, 19:17-18.¹ Such embodiments envision that “a user, such as a doctor, could stand across from the hearing impaired person such that the user is viewing a visual transmitter on the first side, such as a screen and the hearing impaired person is viewing a visual transmitter on the second side, such as a screen.” *Id.*, 19:30-34. “[T]he interpreter is transmitted simultaneously to both the doctor and the hearing impaired such that interpretation services are provided.” *Id.*, 19:34-37.

Figures 3-6 illustrate embodiments of the claimed “single housing.” Figures 3, 4, and 6 are reproduced below:



¹ All emphasis added unless stated otherwise.



As seen above, the “single housing” embodiment includes view screens and cameras on both sides of a single device, allowing two users to access the remote interpreter simultaneously. EX1001, 19:17-45.

A. Prosecution History

The '168 Patent is a divisional of an application filed on October 25, 2001. It was filed on February 8, 2010, and underwent a lengthy prosecution history including multiple appeal briefs before issuing over nine years later, on December 3, 2019. The Examiner’s final rejection of Claim 18 (which was Claim 21 prior to renumbering), ultimately overcome by a Board decision for Applicant, was based on a network-based translation system (“*Bennett*”) combined with a dual-sided panel display device (“*Arai*”). EX1003, 619-621, 832-837. The Board ultimately reversed because the combination did not clearly disclose elements allowing the input of visual information through the first and second input devices. *Id.*, 832-837.

Unlike the Examiner’s combination, the grounds presented in this Petition

explicitly disclose visual input devices and the other required elements of Challenged Claims 18-21. For example, Ground 1-2's *Okaya* reference expressly discloses a four-sided housing that includes a display and a camera on each side of the housing. EX1006, Fig. 1; *see infra* §VI.A. As another example, Ground 3's *Harma* reference discloses a single mobile telephone having a display on one side and cameras on both sides of the device (Challenged Claims 18-20). EX1008, Figs. 5a-5b, 7; *see infra* §VI.B. When combined with *Nagasawa*, disclosing a mobile telephone with displays on both sides, the proposed combination in Ground 4 renders obvious a single housing with displays and cameras on both sides (Claim 21). *See infra* §VI.C. None of these references were considered during prosecution.

B. Level of Ordinary Skill in the Art

As of the earliest claimed priority date, a person of ordinary skill in the art ("POSITA") would be a person with a B.S. degree in electrical engineering, computer engineering, or equivalent training or job experience, along with 1-2 years of experience in the field of real-time or near-real-time telecommunications (*e.g.*, video-based telephony), network computing, computer architecture and design, including desktop and/or mobile computing applications and/or user interface design. EX1004, ¶¶54-57.

Dr. Sandeep Chatterjee, a qualified expert, presents opinions on the knowledge of a POSITA in his declaration, including a technology background.

EX1004, ¶¶20-21,54-81.

V. CLAIM CONSTRUCTION

Claim terms in IPR are construed according to their “ordinary and customary meaning” to a POSITA. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*); 37 C.F.R. §42.100(b). Constructions are proposed “only to the extent necessary.” *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). Petitioners respectfully submit that the Board need not construe any term because the prior art invalidates the claims under any plausible construction, in accordance with 37 C.F.R. §42.100(b). EX1004, ¶¶49, 113-14, 132.

The Challenged Claims require, *inter alia*, a user communication device comprising a housing with two sides, with a “first input device and first display device” on one side, and a “second input device” on the other. EX1001, Cl.18. According to Claim 20, the claimed “input device[s]” include cameras. *Id.*, Cl.20. The “first and second input devices and first display devices are carried by the housing in an orientation to allow the ***at least one user to access*** the at least one first input device [e.g., first camera] and first display device ***from the first side ... at the same time*** as the at least one second input device [e.g., second camera] ***from the second side*** of the housing.” *Id.*, Cl.18. As is explained in connection with the detailed discussion below, Petitioners submit that regardless of how the claim is interpreted, this Petition presents grounds that invalidate the Challenged Claims. *See*

infra §VI.A.1.vi.

VI. ASSERTED GROUNDS OF INVALIDITY

A. Grounds 1-2: Claims 18-21 are anticipated by (Ground 1), or obvious over (Ground 2), *Okaya*.

1. Claim 18

i. 18[p] A communication service device operable with a communication network, comprising:

To the extent the preamble is limiting, *Okaya* discloses *a multimedia carousel* (“communication service device”) for videoconferencing (a “communication service”) over a telephone or packet network (a “communication network”). EX1006, 2:6-13, 2:48-67, 3:1-4, 3:32-59; EX1004, ¶82. *Okaya*’s carousel is shown in Figure 1:

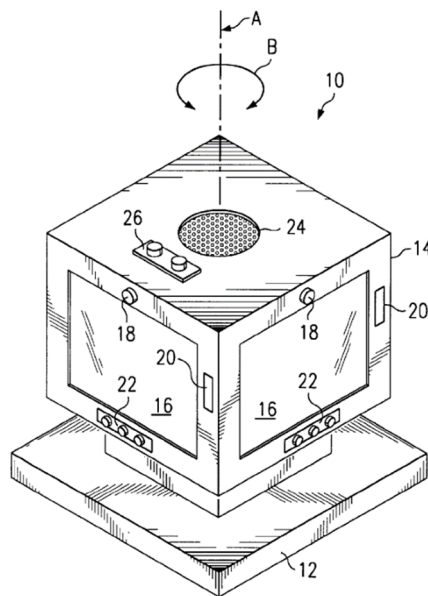


Fig. 1

EX1006, 2:48-50. *Okaya* discloses “a multimedia carousel *for use in video*

conferencing” that “includes a cube-shaped media unit rotatably disposed on a stationary base. Each of the four outwardly facing sides of the media unit is equipped with an active color matrix display, a voice-activated charge coupled device (‘CCD’) camera and a microphone.” EX1006, 2:6-13, 2:48-67, 3:26-42.

Okaya’s carousel can be connected to and used with a video conferencing system or multimedia computer. EX1006, 3:1-4 (“[M]ultimedia carousel 10 includes several input and output terminals for integrating with a multimedia computer or video conferencing system.”), 3:22-42 (“[V]ideo and audio output produced by a multimedia computer or *received from a remote video conferencing terminal can be displayed and broadcast* using the multimedia carousel to participants seated around the carousel.”); EX1004, ¶85. Implementing *Okaya*’s carousel with a video conferencing system or a computer running video conferencing software would have known and/or obvious to a POSITA. EX1004, ¶¶60-65 (explaining known video conferencing technology, as discussed in EX1017-EX1018), ¶¶86-88 (explaining example of carousel operating with a PC, such as that described in EX1020 and EX1025).

When connected to a video conferencing system or multimedia computer, *Okaya*’s users communicate with remote users. EX1006, 3:32-42. *Okaya*’s multimedia carousel, or its combination with the computer/video conference system, thus comprises the claimed “communication service device.” EX1004, ¶89.

Okaya's system communicates with remote users via a communication network, such as a packet network or a plain-old-telephone system (POTS). EX1004, ¶¶86-93 (explaining communications over various networks); EX1006, 2:27-33, 3:26-42, 3:56-65, 4:8-15. For example, callers can use a “Zoom Video or plain old telephone system (‘POTS’) video conferencing card.” EX1006, 3:56-59. *Okaya* also teaches connectivity via a “port for interfacing with an external system.” *Id.*, Cl.1; EX1004, ¶91. *Okaya* thus expressly discloses connecting the multimedia carousel to a video conferencing system or notebook PC to communicate over a network. EX1004, ¶90.

Okaya's disclosure of connecting to a PC would render obvious to a POSITA connecting to other networks. EX1006, 3:26-4:14 (including example of “notebook PC ... connected” to carousel via “video and audio I/O ports”); EX1004, ¶¶91-93 (explaining an example of notebook PCs known to conduct video conferencing by exchanging video over various networks at the time). Thus, a POSITA would have understood *Okaya* to disclose and/or render obvious connections to networks available to video conferencing systems and PCs at that time, including Ethernet and/or the Internet, in addition to POTS. EX1006, 3:56-61; EX1004, ¶¶91-93; *see also infra* 18[a].

- ii. **18[a] at least one user communication device configured to receive and transmit information over the communication network;**

Okaya discloses a multimedia carousel intended to permit communication via a network. *See supra* 18[p]. *Okaya*'s carousel, either alone or integrated with a multimedia computer and/or video conferencing system, permits up to four users to simultaneously communicate with a remote vendor over a network. *Id.*; EX1006, Fig. 2, 3:22-42, 3:56-4:14; EX1004, ¶94.²

Similarly, the *Okaya* system's cameras capture images of each user, which are transmitted from the carousel over a network to the remote vendor's computer to display a split-screen showing each image. EX1006, 3:22-25, 3:62-65 ("The product team's leader speaks first, ... and his image instantly appears on the vendor's display panel."), 4:7-15 ("[T]he images captured by all of the cameras 18 could be simultaneously displayed in a 'split screen' type of arrangement on the vendor's display panel."); 3:56-59 (disclosing video calling over a POTS network). A POSITA would have understood that images from cameras 18 (on the carousel) are transmitted to the remote vendor's display via a connected PC/video conferencing system and intervening nodes as routed along the communication network. EX1004,

² Petitioners note that PO's infringement contentions interpret the claimed "communication service device" of 18[p] and "user communication device" of 18[a] as descriptions of the same device, and relies on that interpretation in the instant petition. EX1009, pp.2, 8-9.

¶¶95-96. *Okaya* teaches that video conferencing involves “face-to-face” conversations, consistent with the POSITA’s understanding that video conferencing includes sending and receiving of video data over a network. EX1006, 1:12-22; EX1004, ¶96.

As noted above, *Okaya* discloses using the multimedia carousel with a PC or video conferencing system for networked communications via standardized connections. EX1004, ¶97; EX1006, 3:1-12 (“[T]he multimedia carousel 10 includes several input and output terminals for integrating with a multimedia computer or video conferencing system. In particular, the multimedia carousel 10 includes an audio input terminal 200 for receiving audio input for output via the speaker 24, a video input terminal 202 for receiving video input for display on the display panels 16, an audio output terminal 204 through which audio signals from the microphones 20 are made available, and a video output terminal 206 through which video signals produced by the cameras 18 are made available.”), Fig. 2 (below).

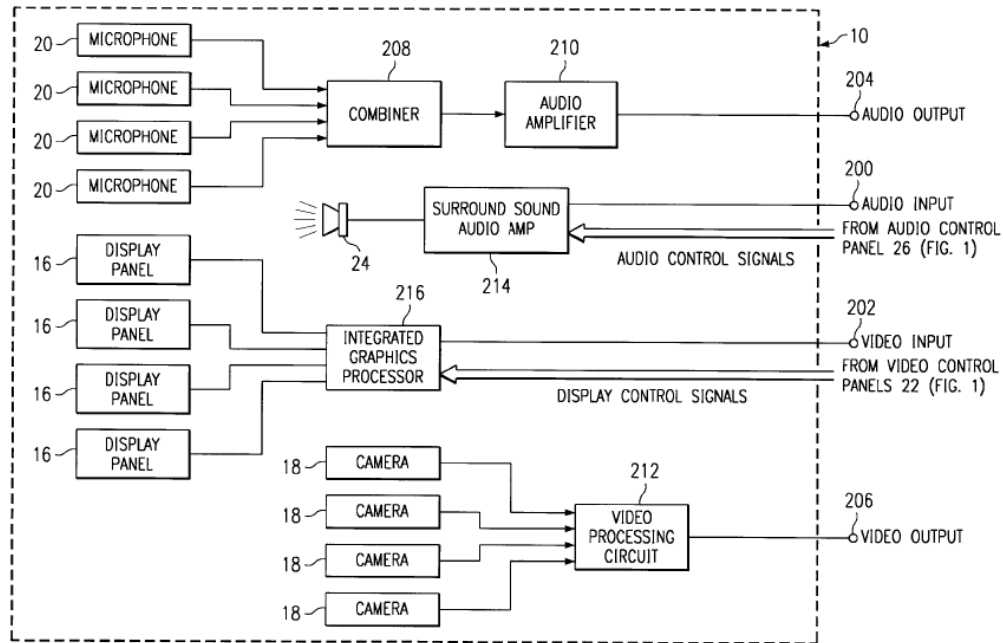


Fig. 2

As explained in 18[p], a POSITA would have known how to implement the multimedia carousel with known multimedia PCs and video conferencing systems according to *Okaya*'s express teachings. 18[p]; see EX1004, ¶¶86-89, 98 (explaining how the POSITA would have known to configure the I/O ports of Figure 2 to function with commercially available PCs).

iii. 18[b] the at least one user communication device comprising a housing having a first side and a second side,

Okaya's Figure 1 illustrates the multimedia carousel includes "a housing" with four sides. EX1006, 2:49-60; EX1004, ¶99. The carousel includes a "*media unit*" illustrated as element 14 of Figure 1, which corresponds to the claimed "housing." *Id.* The media unit shown in Figure 1 has four sides, including the claimed **first side** (annotated below in red), and **second side** (shown opposite the

first side, at the location annotated below in green).

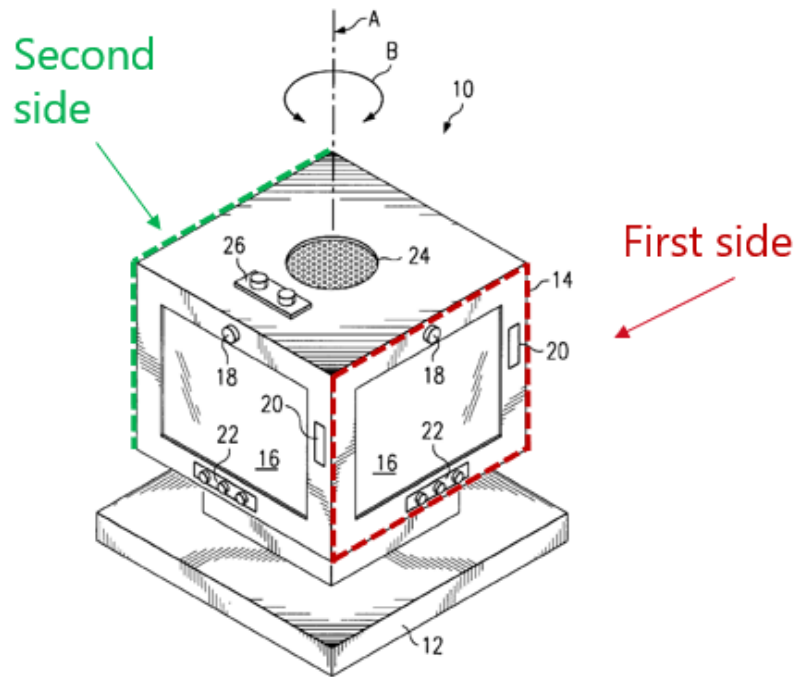


Fig. 1

Okaya also expressly describes media unit 14 having “four outwardly facing sides.” *Id.* (“Each of four outwardly facing sides of the media unit 14, only two of which are shown in FIG. 1, includes a display panel 16, a camera 18.”); EX1004, ¶100.

- iv. 18[c] at least one first input device and first display device configured to allow the at least one user to input and output visual information wherein the at least one first input device and first display device resides on the first side of the housing,

Okaya discloses that the multimedia carousel includes a **camera 18** (the claimed “first input device”) and a **display 16** (the claimed “first display device”) residing on all four sides of the media unit, including on **the first side**. EX1006,

2:53-56 (“Each of four outwardly facing sides of the media unit 14 ... includes a display panel 16, [and] a camera 18”); EX1004, ¶101. Claim 20 of the ’168 Patent claims the “first input device” as a camera. EX1001, Cl.20.

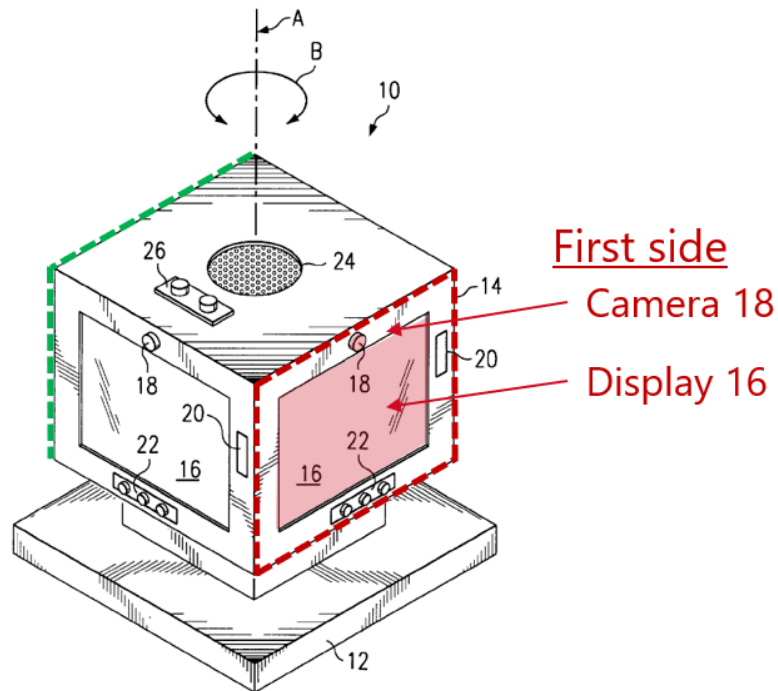
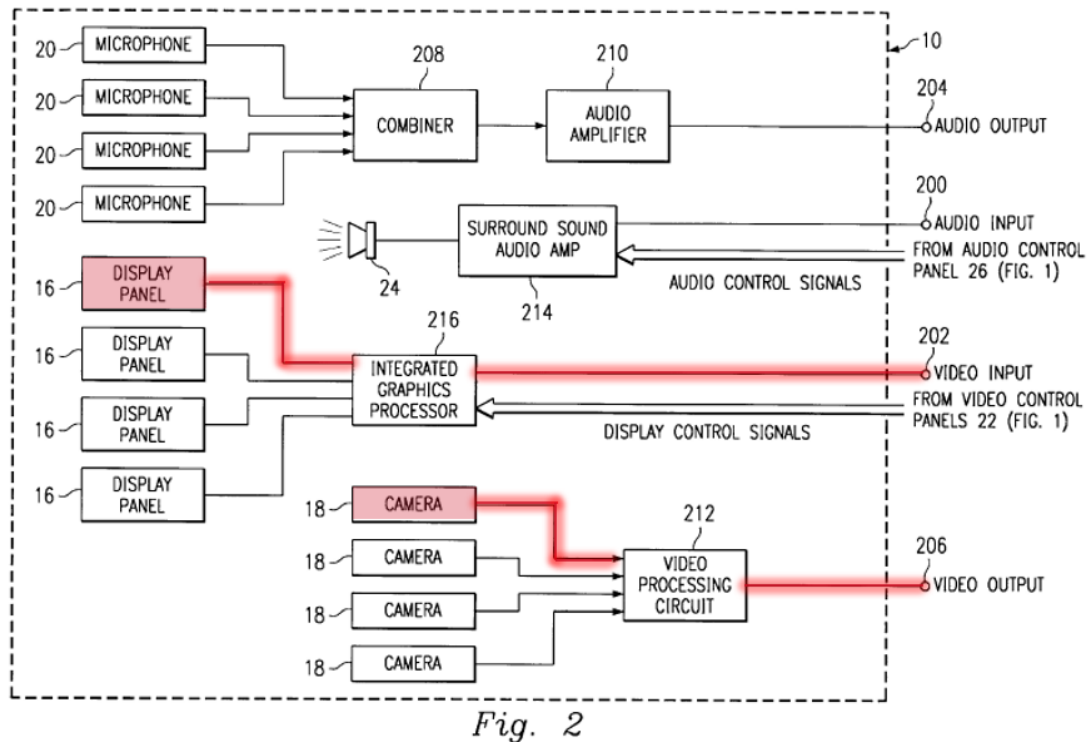


Fig. 1

Each **display 16** is configured to display video received via a video input terminal (*i.e.*, “output visual information”), while each **camera 18** is configured to produce video to a video output terminal (*i.e.*, “input visual information”). EX1006, 3:4-11 (multimedia carousel includes “a video input terminal 202 for receiving video input for display on the *display panels 16*” and a “video output terminal 206 through which video signals produced by the *cameras 18* are made available.”), 3:22-25,

3:32-38, Fig. 1 (above); EX1004, ¶102.

Figure 2 of *Okaya* further illustrates how **camera 18** inputs visual information to produce video towards video output terminal 206 (and thus, the multimedia PC or video conferencing system) via video processing circuit 212 and how **display panel 16** outputs visual information received from video input terminal 202 via integrated graphics processor 216 (with **red** annotations illustrating input and output paths):



EX1004, ¶103. *Okaya*'s **camera 18** is “configured to allow the at least one user to input ... visual information” because a user can be recorded by camera 18 during video conferencing, providing video at video output terminal 206, as shown above. EX1006, 3:22-25; EX1004, ¶104. Likewise, *Okaya*'s display panel 16 is “configured to allow the at least one user to ... output visual information” because a

user can view images received from video input 202 on display panel 16 during video conferencing. EX1006, 3:32-38; EX1006, 2:53-60, Claim 3; EX1004, ¶¶104-105.

- v. **18[d] at least one second input device configured to input visual information wherein the at least one second input device resides on the second side of the housing;**

As discussed above for 18[c], each side of *Okaya*'s media unit 14 contains a **camera 18** (the claimed "at least one second input device"), including on a **second side** of the device. EX1006, 2:53-56. ("Each of four outwardly facing sides of the media unit 14 ... includes a display panel 16, a camera 18 and a microphone 20."); EX1004, ¶106. Claim 20 of the '168 Patent claims the "second input device" as a camera. EX1001, Cl.20.

Okaya expressly discloses a camera and display on each of the four outwardly facing sides such that the **second side** (highlighted in **green** below) includes the same components shown on the two sides visible in the illustration (including the **first side**):

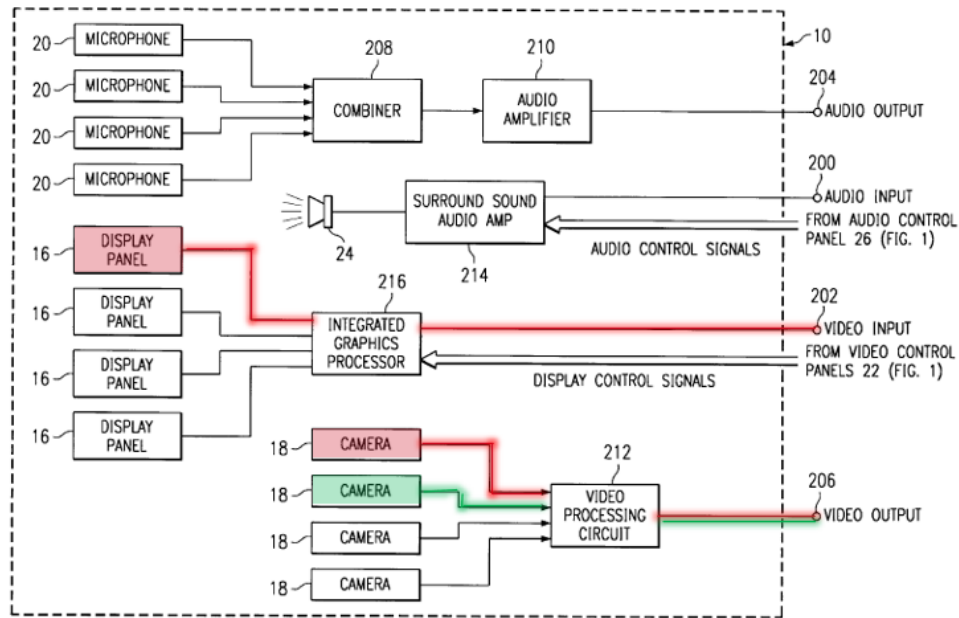


Fig. 2

Okaya's **camera 18** is “configured to allow the at least one user to input ... visual information” because a user facing that side can be recorded by camera 18 during video conferencing, which produces video towards video output terminal 206, as shown above. EX1006, 3:22-25; EX1004, ¶¶111-12.

- vi. **18[e] wherein the first and second input devices and first display devices are carried by the housing in an orientation to allow the at least one user to access the at least one first input device and first display device from the first side of the housing at the same time as the at least one second input device from the second side of the housing.**

Okaya discloses this limitation whether the claim is interpreted consistent with the specification or with Patent Owner's (“PO”) infringement contentions.

First, under a claim interpretation where “at least one user” encompasses

preferred embodiments involving two users, a first user accessing the first input/display device from the first side at the same time a second user accesses the second input/display device (EX1001, 19:29-37, Figure 5), *Okaya* discloses that an entire product team of up to four users, including a first and second user, accesses the cameras and displays on the multimedia carousel at the same time. *See* EX1006, 3:32-4:14; *see supra* 18[p]-18[d].

Second, under PO's apparent claim interpretation where a single user is merely controlling or using the first and second input device and first display at the same time, *Okaya* discloses that the feeds from the various cameras 18 are combined into a single video output to a video conference system or PC, and it is at least obvious that at least one user would utilize the video conference system to call up a remote participant, thereby "accessing" all of the video feeds to transmit them to the remote participant. EX1006, Fig. 2 (elements 212, 206), 3:22-25, 3:56-65. *Okaya* further discloses that any single user of the multimedia carousel "accesses" all four of the cameras under at least PO's apparent interpretation because any single user may can swivel the base of the carousel to adjust the camera feeds of himself and the other users. EX1006, 3:65-4:3.

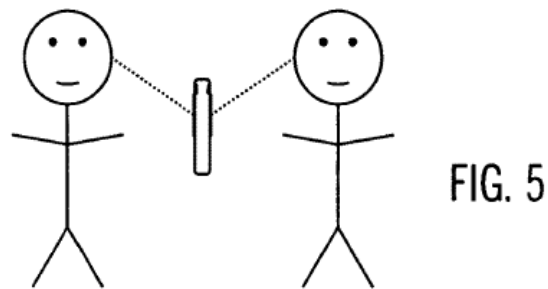
Each theory is explained below:

(1) First Theory: Two Users Access Each Side Simultaneously.

If 18[e] is interpreted to cover the preferred embodiments described in

the '168 Patent (EX1001, Figs. 3-6, 19:17-45), *Okaya* discloses that ***two users*** simultaneously access the claimed devices from opposite sides of the housing. EX1006, 3:38-42; 3:61-62; EX1004, ¶116.

The '168 Patent describes a preferred embodiment where each side of a device has a microphone, a camera, and a screen. *Id.* In this embodiment, ***a first user*** accesses the camera and display from a first side of a device at the same time ***a second user*** accesses a second camera and display from the second side of the device. *Id.*; *see id.*, 19:30-34 (describing a doctor accessing one side of the device while a hearing-impaired person accesses the device from the other side); EX1004, ¶117. Figure 5 illustrates this—showing two users each respectively accessing components on opposite sides of the device:



The claim scope is presumed in this interpretation to include this preferred embodiment. Indeed, the claim originally recited two users explicitly, until it was amended (without explanation) in prosecution. EX1003, 320, 492 (amending Claim 21, renumbered later as Claim 18). Presumably Applicant intended to expand the scope of the claims to cover a single user case ***in addition to*** the two-user case that

was previously claimed. EX1004, ¶119.³

Under this interpretation of the claims, *Okaya* discloses up to four users simultaneously “accessing” the multimedia carousel’ cameras and displays from their respective sides of the carousel to conduct a video conference with a remote vendor. EX1006, 3:38-4:7; *see supra* 18[p]-18[d]. *Okaya* states that “the cameras 18 are switched on” to discuss a presentation with a remote vendor and that all four participants may view what is presented on their respective display panels during that discussion. EX1006, 3:61-4:14, 3:32-35.

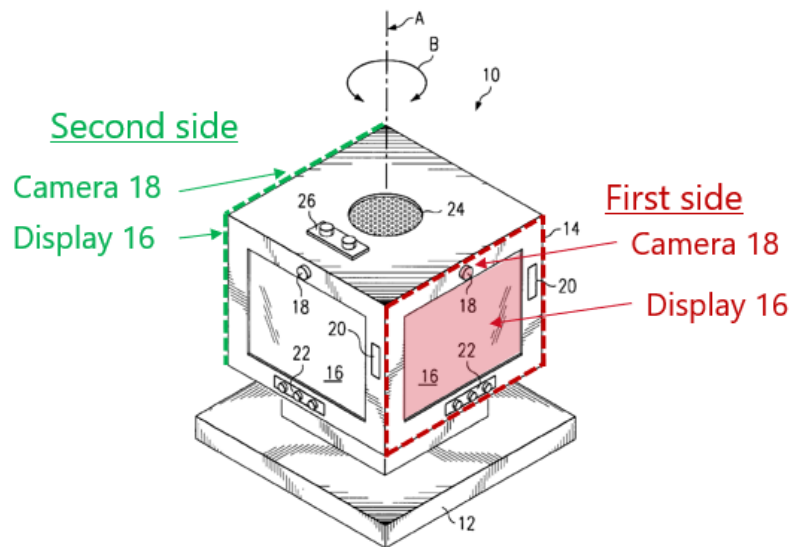


Fig. 1

³ Petitioners do not waive their right to argue Claim 18’s unpatentability in other fora based on the ’168 Patent’s failure to adequately explain how a single user could access the cameras/displays from both sides of the device at the same time.

The POSITA would have understood that team members would access the camera and display on each side of the multimedia carousel to conduct a face-to-face video conference with a remote vendor. EX1006, 1:16-21; EX1004, ¶121 (explaining POSITA’s understanding of video conferencing as a face-to-face communication in which participants view received video while transmitting recorded video). *Okaya* discloses that each individual user’s camera feed can be simultaneously transmitted to the remote participant for split-screen viewing. EX1006, 1:16-21, 3:22-25, 3:32-42, 4:1-3 (describing positioning cameras such that “*participants are within the line of sight of one of the cameras 18*”), 4:8-15 (“the images captured by all of the cameras 18 could be *simultaneously displayed* in a ‘split screen’ ... arrangement on the [remote] vendor’s display panel”). EX1004, ¶121. *Okaya* expressly describes that team members participating on the video conference and being recorded by the cameras may “view [] what is being presented on the display panels 16.” EX1006, 3:65-4:3, 4:8-15. A POSITA would have understood that the video displayed on the carousel’s display panels 16 during the video conference would include video of the remote participant. *Id.*; see EX1006, 1:16-21 (in “typical video conferencing, ... persons in remote locations [] conduct face-to-face conversations.”); EX1017, 134 (explaining that video conferencing enables video in “two-way conversations”). The POSITA would have thus understood, or found it obvious, that users of carousel would view such content on

display panels 16 at the same time the camera feeds were capturing images of the team to be *simultaneously displayed* in a split screen arrangement on the remote vendor's display panel. EX1004, ¶121. *Okaya* thus discloses that at least one user accesses a camera and display on one side of the device while a second user access a second camera from a second side of the device. *Id.*

Accordingly, to the extent that “at least one user,” as claimed in 18[e], includes at least two users simultaneously using the claimed device from different sides of the device, *Okaya* discloses that each participant accesses their respective display and camera to communicate with the remote vendor at the same time, including at least a first user accessing a display and camera on the first side while a second user accesses a display and camera on the second side. EX1004, ¶121.

(2) Second Theory: One User Accesses All the Cameras Via the Operation of the Multimedia Carousel.

PO's infringement contentions allege that a device being used by a single user meets the claim if a single user can control the cameras and feeds from both sides of the device. EX1009, 80-82, 89-90. PO's infringement read appears to interpret the term “*to access* ... the at least one second input device” to include controlling, viewing, and/or using information from the second input device at the same time as the other devices. EX1014, p.3 (defining “access” to include “making use of”). Although Petitioners reserve the right to challenge whether such an interpretation is

correct in the KP2 Litigation, Petitioners expressly rely on this claim interpretation for **Ground 2, as well as Grounds 3-4** presented below. *10X Genomics, Inc. v. Bio-Rad Labs., Inc.*, IPR2020-00086, Paper 8, 17-22 (P.T.A.B. Apr. 27, 2020) (clarifying that a Petitioner need only identify “[h]ow the challenged claim is to be construed” for the petition and “judicial efficiency will be enhanced by allowing Petitioner to rely upon a claim construction that [PO] is relying upon in the related district court litigation”); *see also Western Digital Corp. v. SPEX Techs., Inc.*, IPR2018-00082, Paper 11, 12 (P.T.A.B. Apr. 25, 2018).

Under PO’s interpretation, *Okaya* discloses or renders obvious this claim element. *Okaya* discloses or renders obvious that one participant accesses the “first input device,” “first display device,” and “second input device,” by accessing his own camera and display while also accessing the camera feeds of the other participants. EX1004, ¶123. *Okaya* discloses or renders obvious that one member of *Okaya*’s product team “accesses” all cameras 18 of the multimedia carousel 10 at the same time as viewing his local display 16 by operating the carousel. EX1004, ¶123; *see also supra* §VI.A.1.vi(1) (explaining how camera and displays are accessed at the same time). For example, it would have been apparent and/or obvious for one user to (a) turn on/off the various cameras, (b) adjust the media unit to change the video being captured by the cameras, and/or (c) operate the video conferencing system and/or multimedia PC to call up the remote participant, causing the

transmission of all the camera feeds to the remote participant. EX1004, ¶123.

Okaya describes a videoconference in which a “product team calls up the outside vendor,” makes a presentation, “cameras 18 are switched on,” and discussion ensues. EX1006, 3:56-62. In order for this to happen, a POSITA would have understood and would have found it obvious for one team member to switch on the cameras, connect the various audio/video input/output ports shown in *Okaya*’s Figure 2 to the PC (or video conferencing system) and operate the cameras to send a remote vendor a split screen view via the PC.⁴ EX1004, ¶124. *Okaya* explains that its “input and output terminals” are “for integrating with a multimedia computer or a video conferencing system” (e.g., a remote computer) and that “video signals received” are “provided to the display panels 16 for display.” EX1006, 3:1-4, 3:32-42. The operation of the notebook PC or video conferencing system, which would naturally be performed by a single user, is the natural result of following *Okaya*’s express teachings which instruct the POSITA to connect the ports in Figure 2 to a multimedia PC or video conferencing system. EX1004, ¶125; EX1006, 3:1-12, 3:49-54.

⁴ It would have been obvious to a POSITA from *Okaya*’s teaching of switching cameras on that a single user could access the cameras to switch them off. EX1004, ¶¶124, fn.10.

Focusing on the camera inputs, *Okaya*'s Figure 2 shows that video output terminal 206 receives input from cameras 18 (including the **first** and **second camera**):

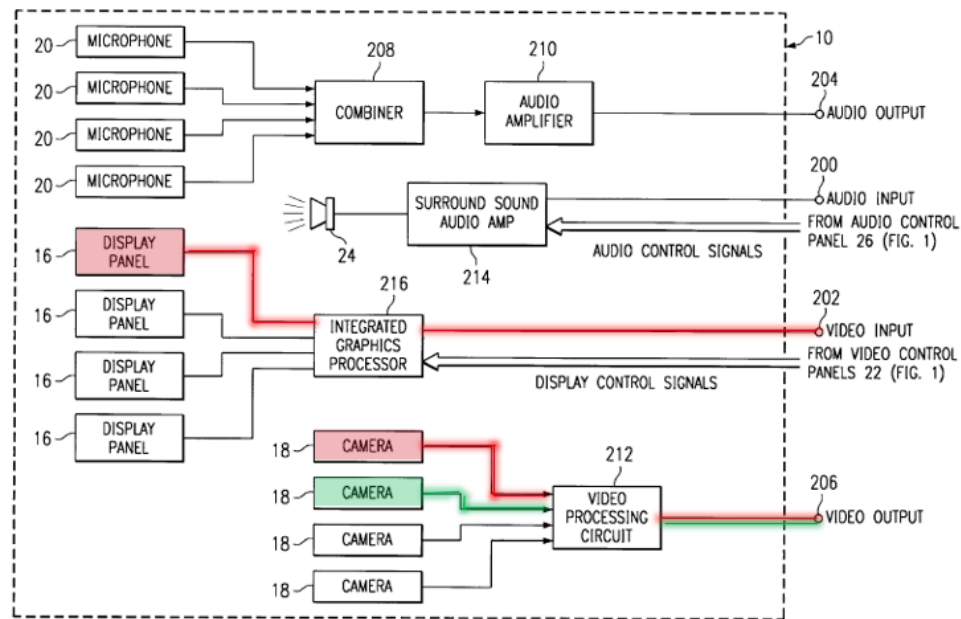


Fig. 2

EX1006, Fig. 2, 3:4-12.

The video output terminal 206 includes access to a “first input device” (a **first camera**) and a “second input device” (a **second camera**). *Id.* By connecting the multimedia carousel to a PC or video conferencing system and operating cameras in the carousel, one member of the team accesses these two input devices “at the same time.” EX1004, ¶¶126-27. *Okaya* expressly provides that “the product team calls up the outside vendor using their Zoom Video or plain old telephone system (‘POTS’) video conferencing card and/or peripheral. The product team then presents their product to the vendor via a video conferencing system.” EX1006, 3:56-61. A

POSITA would have understood that a Zoom Video or POTS conferencing card was a commonly available peripheral for notebook PCs, and that the disclosed operations of using a notebook PC or video conferencing system to call up the outside vendor would have been accomplished by one of the four team members using the notebook PC or video conferencing system. EX1004, ¶¶128-129. That same person would have naturally and obviously situated himself in front of one of the four cameras of the carousel to participate in the conference along with the other team members. EX1004, ¶131; EX1006, 3:22-25, 3:32-42, 3:65-4:3, 4:8-15. This would have been especially apparent to the POSITA because *Okaya*'s discussion of using a videoconferencing card immediately follows a description of one member connecting his notebook PC to the multimedia carousel to give a PowerPoint presentation to the team. EX1006, 3:46-54; EX1004, ¶129. It would have thus been known, or at least obvious, for one member of the product team to use the PC with an appropriate videoconferencing card to hook up the PC to the audio/video output 204/206, switch the cameras on, and call up the outside vendor, thereby accessing all of the cameras to transmit video over a network to the remote vendor's computer. EX1004, ¶¶123-131 (explaining how one person accesses all cameras and a display of the multimedia carousel at the same time).

For example, the POSITA would have known that the Zoom Video conference card referred to by *Okaya* (EX1006, 3:53-59) was a well-known

PCMCIA card used for videoconferencing on a notebook PC. EX1004, ¶¶66-67, 130 (explaining use of PCMCIA and Zoom Video cards in a notebook PC and citing EX1021-EX1022). The member using the notebook PC or video conference system would simply need to hook the PC up to the video output port 206 to access all four video feeds from cameras 18 for the video conference. EX1006, 3:22-25 (“video signals from the cameras 18 are processed as necessary by a video processing circuit 212 and then made available at the video output terminal 206 to, e.g., a video conferencing system.”); EX1004, ¶130. The notebook PC or video conference “accesses” the carousel’s cameras for the purpose of transmitting the images captured by the cameras to the remote vendor’s computer, as is described by *Okaya*. EX1006, 3:49-62, 4:3-14; EX1004, ¶130. The same team member operating the notebook PC or video conferencing system also accesses his own “first display device” and “first input device” at the same time as accessing all cameras by using his own camera and viewing his own local display panel 16. *Id.*; EX1004, ¶131.

Additionally, *Okaya* discloses or renders obvious that any single user of the multimedia carousel can control (*i.e.*, “access” in PO’s view) the cameras of other users by adjusting the carousel relative to its base. EX1006, 3:65-4:3 (“At any time during the discussion or presentation, the media unit 14 may be rotated relative to the base 12 to enable participants to get a better view of what is being presented on the display panels 16 or to ensure that particular participants are within the line of

sight of one of the cameras 18.”). A POSITA would understand that because the multimedia carousel is a single unit, any adjustment of the media unit relative to its base would result in adjusting the camera feed of all participants, thereby controlling the images being transmitted to the remote vendor and meeting the claim at least under PO’s apparent claim interpretation. EX1004, ¶132. For these reasons, at least one member of *Okaya*’s product team accesses a “first input device,” a “second input device,” and a “first display device” “at the same time” under any plausible interpretation of this limitation.

2. Claim 19

- i. **19[a] The communication service device as claimed in claim 18, wherein the first side of the housing and the second side of the housing face mutually opposite directions.**

Okaya’s Figure 1 illustrates the **first side** of the housing and the **second side** of the housing facing mutually opposite directions:

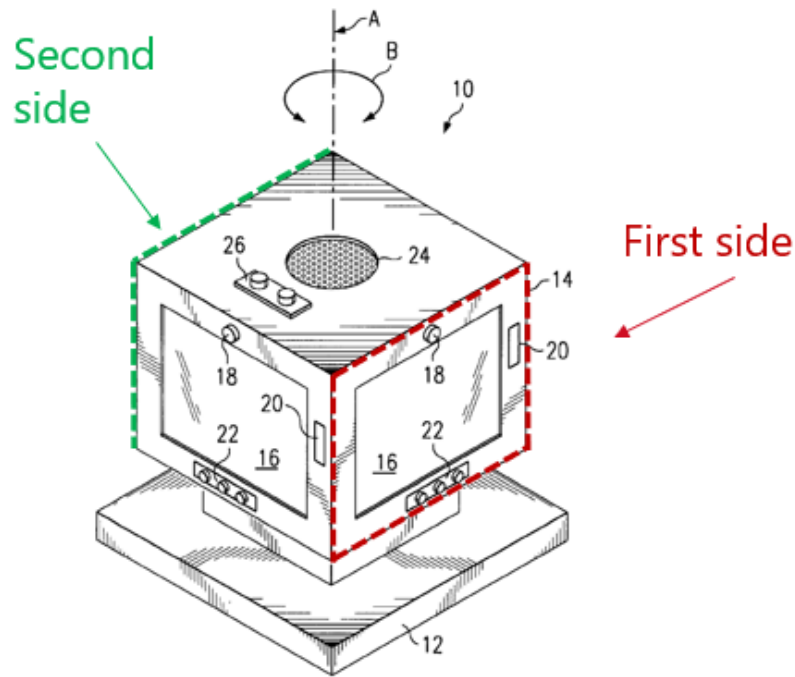


Fig. 1

EX1006, Fig. 1, 2:48-56.

No matter how the media unit 14 of *Okaya* is rotated (as indicated by arrow B around vertical axis A), in at least some embodiments, the **first side** and **second side** remain facing opposite directions. EX1004, ¶¶133-34.

3. Claim 20

- i. 20[a] The communication services device as claimed in claim 18, wherein the first input device comprises a first camera, and where the second input device comprises a second camera.

See 18[c]-18[d] for *Okaya*'s disclosure of the **first camera 18** on a first side of the media unit 14 and the **second camera 18** on an opposite side of the media unit 14. *Okaya*'s Figure 1 and corresponding description disclose a camera on each side

of the media unit 14.

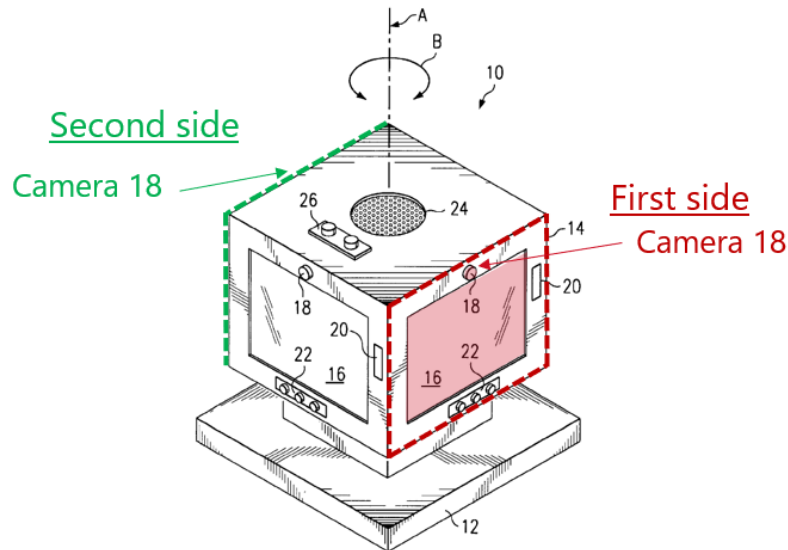


Fig. 1

EX1006, Fig. 1, 2:53-56 (“Each of four outwardly facing sides ... includes a ... camera 18”), 2:65-67.

4. Claim 21

- i. **21[a] The communication services device as claimed in claim 19 includes, a second display device residing on the second side of the housing.**

Okaya’s Figure 1 and corresponding description disclose a display panel 16 on each side of the media unit 14, including a **second display panel 16** (the claimed “second display device”) on the **second side** (*i.e.*, the “second side”) of the media unit 14.

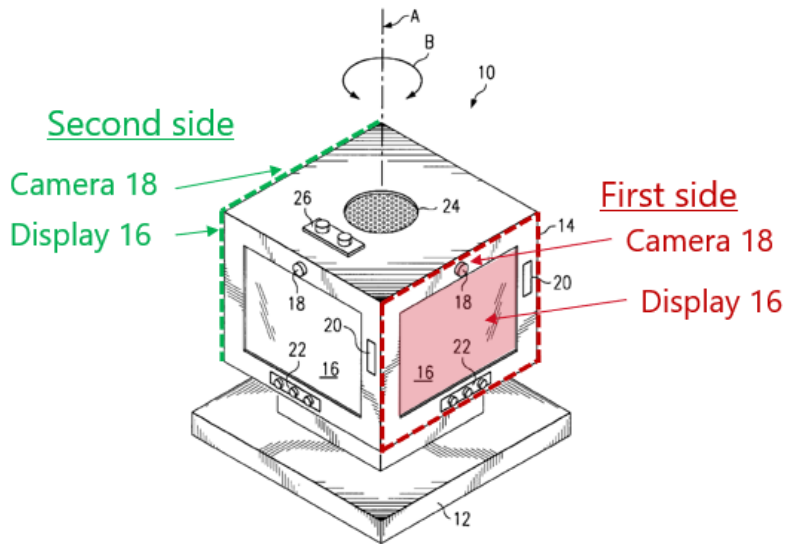


Fig. 1

EX1006, Fig. 1, 2:53-56. *Okaya* further discloses that its “display panels 16” may be “active matrix displays.” *Id.*, 2:65-67.

B. Ground 3: Claims 18-20 are obvious over *Harma*.

1. Claim 18

i. 18[p]

To the extent the preamble of Claim 18 is limiting, *Harma* discloses a communication service device operable with a communication network. *Harma* discloses “*a mobile phone* comprising a camera.” EX1008, 1:3. *Harma*’s mobile phone corresponds to the claimed communication service device, as it provides communication services. EX1004, ¶138; EX1015-EX1016. *Harma*’s phone is operable with a radio network, a form of communication network. *Id.*; EX1008, 5:29-35. *Harma*’s mobile phone is illustrated below:

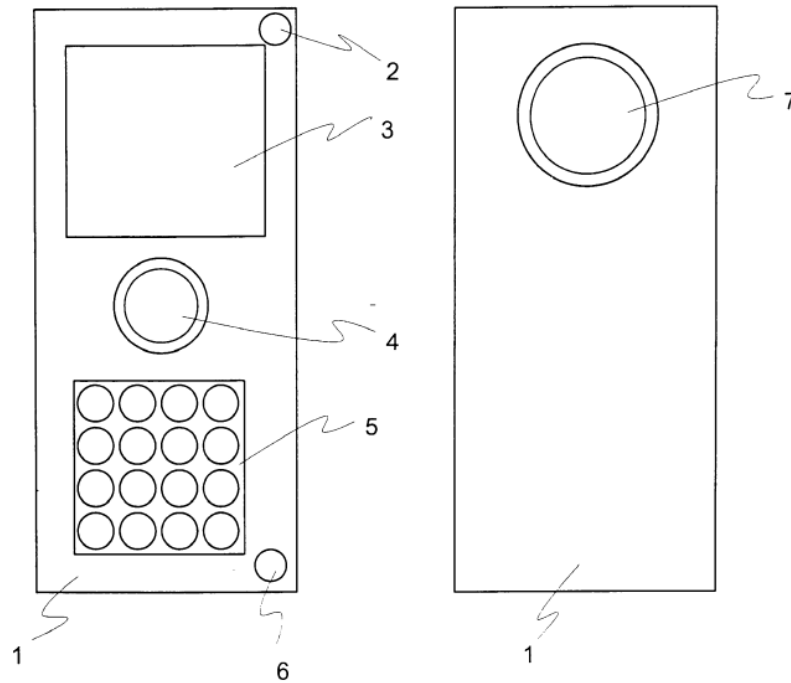


Fig. 1a

Fig. 1b

Figure 1a illustrates “a mobile phone” that is “seen at the front.” EX1008, 4:16-18, Fig. 1a. “On the front side of the mobile phone 1 ... there is arranged a ... display 3 [and] first camera 4.” *Id.*, 4:17-20. Figure 1b illustrates the same mobile phone “viewed at the rear.” *Id.*, 4:24-25. “[T]he second camera 7 of the mobile phone 1 is installed on the opposite side of the mobile phone with respect to the first camera 4.” *Id.*, 4:25-27.

Harma’s mobile phone includes “radio transmitter/receiver 20” that “functions as in known mobile phones” and is used “in a video conference.” EX1008, 1:21-24, 5:29-30. A POSITA would understand or at least find obvious that a “mobile phone” with the radio components described by *Harma* was operable

with a communication network. EX1004, ¶¶138-141 (citing EX1015, EX1016).

ii. 18[a]

See 18[p]. *Harma* discloses a mobile phone, which is a user communication device configured to receive and transmit information over a communication network. EX1004, ¶142.⁵ *Harma* discloses a user using the mobile phone to communicate over a network, for example in a videoconference. EX1008, 1:21-23, 2:16-24, Fig. 3a. The radio transmitter/receiver is highlighted below in *Harma*'s Figure 4:

⁵ See *supra* fn. 2.

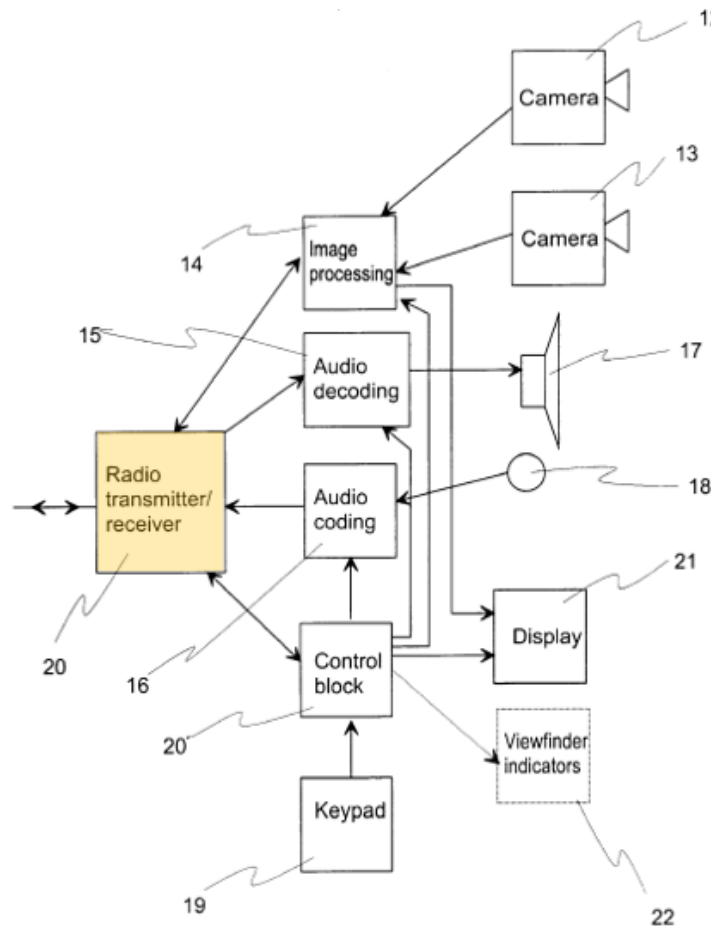


Fig. 4

The radio transmitter/receiver 20 “functions as in known mobile phones.” EX1008, 5:29-30. The POSITA would have understood *Harma*’s radio component (shown above) communicated with a cellular radio network. EX1004, ¶¶144-145 (citing EX1015, EX1016). For example, the double arrow to the left of the radio transmitter/receiver suggests a radio network over which the mobile phone communicates. *Id.* Accordingly, *Harma*’s mobile phone is configured to transmit and receive over a communication network using radio transmitter/receiver 20. *Id.*

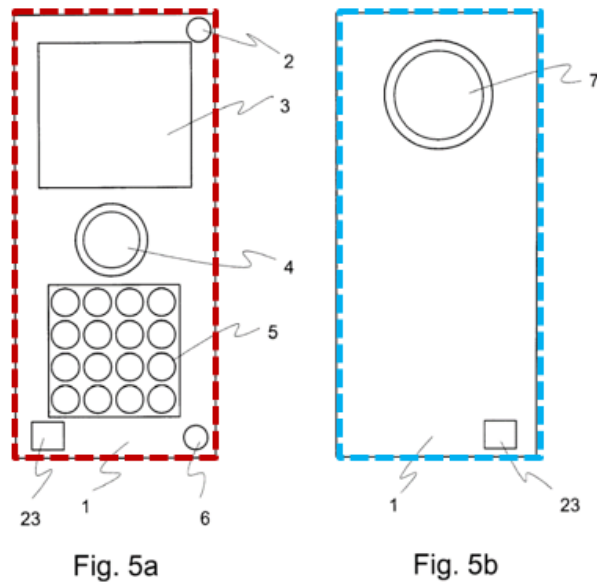
Harma further suggests that its mobile phone can be used for “video

conferencing.” *Id.*, 1:4-5 (“[M]obile phones include a camera that enables capturing ... video clips, as well as their use in video conferences”). Videoconferencing is another form of communication that receives and transmits information over a communication network. EX1004, ¶146 (citing EX1017, at pp.18, 116, 137, 140-43). It would have been obvious to a POSITA to implement the disclosed videoconferencing embodiment via a communication network using the mobile phone’s radio transmitter/receiver, particularly in the multiple-caller scenario envisioned in *Harma*. EX1008, 2:21-23 (describing “four participants of a video conference”); EX1004, ¶146 (explaining videoconferencing over a network).

iii. 18[b]

Harma discloses this limitation. For example, *Harma* discloses a mobile phone comprising a housing with a **first side** and a **second side**. EX1008, Figs. 5a-5b, 6:4-16. *Harma* illustrates the front side and back side of the mobile phone in Figures 5a and 5b⁶ (annotated below):

⁶ A POSITA would have understood *Harma*’s Figures 1-5 described minor variations of a mobile phone that was otherwise the same device. For example, *Harma*’s “second embodiment” merely adds “foldable support legs 24” to *Harma*’s first embodiment, and *Harma*’s “third embodiment” merely adds a viewfinder. EX1008, 5:4-6, 6:15-16, Figs. 2, 5b. As another example, Figure 3 “illustrate[s] ...



As described by *Harma*, “Figure 5a is a schematical illustration of a mobile phone 1 ... seen at the front. On the **front side** of the mobile phone, **i.e. on the side that faces the user while operating**, there is a loudspeaker 2, a display 3, a first camera 4, a keypad 5, a microphone 6 and an optical viewfinder 23.” EX1008, 6:4-8. Likewise, “Figure 5b is a schematical illustration of a mobile phone 1 ..., viewed at **the back**. ... the second camera 7 of the mobile phone 1 is placed on the **opposite side** of the mobile phone with respect to the first camera 4.” EX1008, 6:12-16.

using the mobile phones according to the different embodiments.” EX1008, 4:8-9. Accordingly, where the Petition relies on descriptions of different Figures, Petitioners submit that the relied-on elements of those Figures are common to the various embodiments and/or would have at least been obvious to implement as a single combined device. EX1004, ¶149.

iv. **18[c]**

Harma discloses this limitation. For example, *Harma* discloses a mobile phone comprising a housing with a **camera 4** and **display 3** on a **first side** of the housing. EX1008, Fig. 5a-5b, 6:4-16.

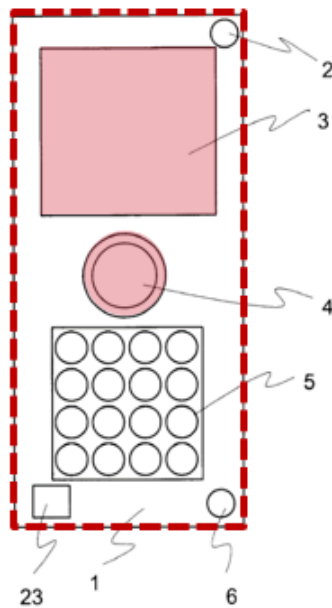


Fig. 5a

As explained by *Harma*, “Figure 5a is a schematical illustration of a mobile phone 1 ... seen at the front. On the **front side** of the mobile phone, ... there is a loudspeaker 2, a **display 3**, a **first camera 4** Obviously the **first camera 4** may be located in some other spot of the mobile phone, for instance behind the display 3” EX1008, 6:4-11, 1:31-2:1.

Harma further explains that a user may input and output visual information via **display 3** and **camera 4**. EX1008, 5:7-23, Figs. 3a-3b. For example, *Harma*

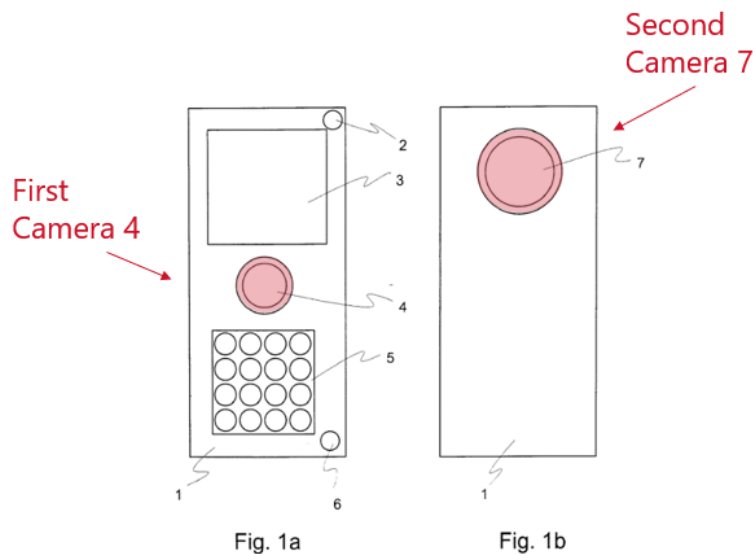
Figure 4 illustrates “operation of the mobile phones” of Figures 1-3b and 5a-5b. EX1008, 4:10-12. A POSITA would have found it obvious to combine the block diagram of *Harma*’s Figure 4 with the mobile phones illustrated in Figures 1, 2, and 5, as well as the operational embodiment of Figure 3. EX1004, ¶152. Figure 4 is a “block diagram of the operation of a mobile phone,” with components and functions “as in known mobile phones,” such that a POSITA would have known to use Figure 4 to implement camera, display, and communications functions described throughout *Harma*. EX1008, 5:24-30; EX1004, ¶152. As described in Figure 4, *Harma*’s mobile phone is “configured to allow the at least one user to ... output visual information,” as claimed, because *the user may output images or video from either first camera 4, second camera 7, or both cameras* on display 3. EX1008, 4:32-36, 5:9-13 (on the display “is seen a split-screen image composed of the images of the first and second camera”), 5:31-35 (describing a “control block” that may “show on the display 21 an imaged captured by the camera 12 or the camera 13 or both” or may “combine on the display 21 an image produced by the camera 12 or the camera 13 or both with an image received by radio by the radio receiver 25.”), Figs. 2, 4, 5a-5b, EX1004, ¶153.

v. **18[d]**

See 18[c]. *Harma* discloses this limitation. Specifically, *Harma* discloses a **second camera 7** (i.e., “at least one second input device” as claimed) configured to

capture images (*i.e.*, “input visual information” as claimed), where the **second camera 7** resides on the second side of the housing. EX1008, 4:28-5:23, 5:31-35, 6:4-11, Figs. 2-5b; EX1004, ¶154.

Harma’s **second camera 7** is illustrated below, on the opposite side of the housing as the **first camera 4**:



EX1008, 6:4-16 (“Figure 5b is ... a mobile phone 1 according to a third embodiment of the invention, **viewed at the back**. In this preferred embodiment, **the second camera 7** of the mobile phone 1 is placed **on the opposite side of the mobile phone** with respect to the first camera 4.”), 1:31-2:1 (explaining that “the cameras are arranged on opposite sides of the mobile phone”). *Harma*’s **second camera 7** is “configured to input visual information,” as claimed because it may capture images or video. EX1008, 4:36-5:4, Fig. 2, 3:33-34.

Harma further explains that a user may input and output visual information

via **display 3** and **camera 7**. EX1008, 5:7-23, Fig. 3. *Harma*'s mobile phone is "configured to allow the at least on user to ... output visual information," as claimed, because the *user may output images or video from either first camera 4, second camera 7, or both cameras* on display 3. EX1008, Cl.6, 4:32-5:6, 5:9-14 (on the display "is seen a split-screen image composed of the images of the first and second camera"), 5:31-35 (describing a "control block" that may "show on the display 21 an imaged captured by the camera 12 or the camera 13 or both" or may "*combine* on the display 21 *an image produced by the camera 12 or the camera 13 or both* with an image received by radio by the radio receiver 25."), Figs. 2, 4-5b; EX1004, ¶156.

vi. **18[e]**

See 18[c]-18[d]. *Harma* discloses this limitation at least under PO's apparent interpretation of it, which includes that at least one user accesses a first camera and first display device from the first side of the housing at the same time as a second camera from the second side of the housing when a single user uses both cameras to, *e.g.*, view the feeds from two opposing cameras on a split screen. *See* §VI.A.1.vi(2), above (explaining PO's interpretation of these limitations). Relying on PO's interpretation, *Harma* discloses that two cameras (*i.e.*, "first and second input devices") are carried by the mobile phone in an orientation to allow a user to access the first camera and display at the same time as the second camera at least by

viewing a combined and/or split-screen image of the images captured by the two cameras. EX1008, 5:7-23, 4:32-5:13, 5:31-35, 6:4-11, Figs. 2-5b; EX1004, ¶157.

Harma discloses that a single user may operate the mobile phone to capture images using camera 4 on the first side of the phone and camera 7 on the second side of the phone, and that those images can be simultaneously displayed on a display on the first side of the phone (*e.g.*, in “split screen”). EX1008, 5:10-14 (on the display “is seen a split-screen image composed of the images of the first and second camera”), 5:31-35 (describing a “control block” that combines images from the cameras and/or received images), Figs. 2, 3a, 4-5b; EX1004, ¶158. *Harma* illustrates how both cameras may be “accessed” by a user 8 to view a combination of the images captured by the first and second cameras:

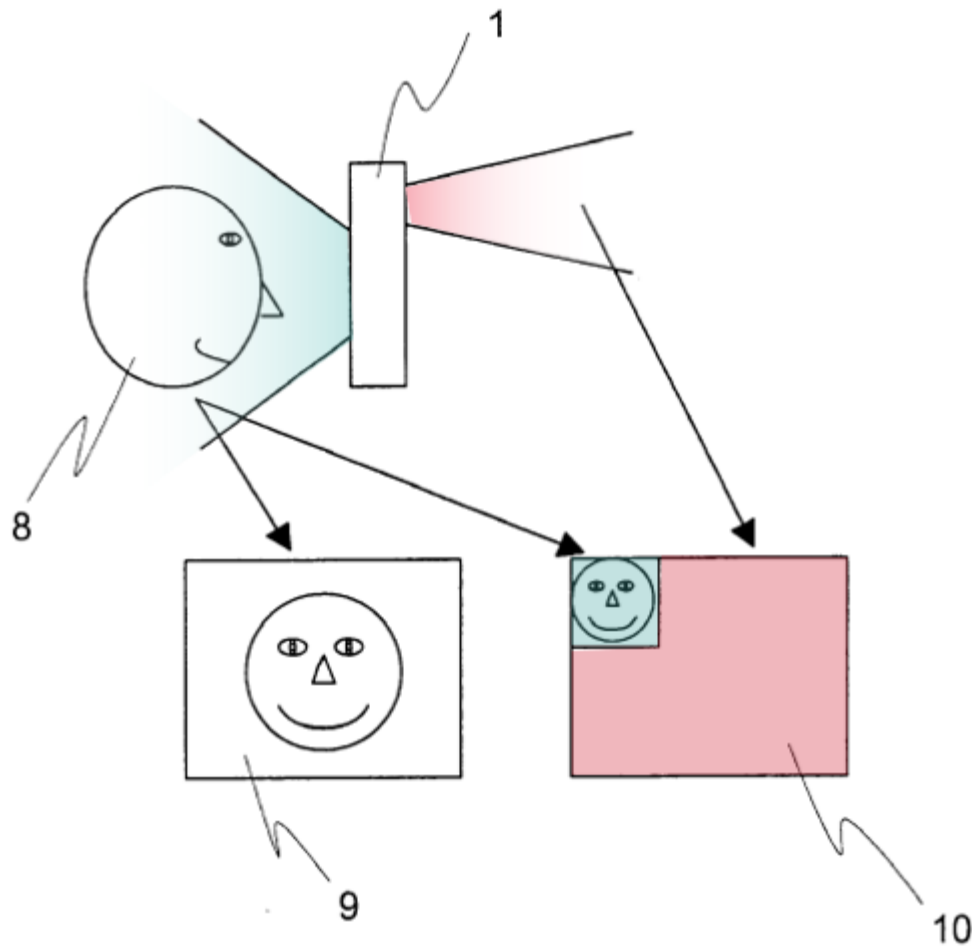


Fig. 3a

EX1008, Fig. 3a.

As seen above and further described by *Harma*, “[o]n the display,” there is an “image 9 of the user, or an **image 10**, where the **user’s image** is seen as a smaller picture in addition to the **image captured by the other camera**, i.e. on the display there is seen a split-screen image composed of the images of the first and second camera.” EX1008, 5:10-14, Cl.6 (“[T]he display (3) is arranged to show simultaneously the images of the **first camera (4)** and the **second camera (7)**.”). A

POSITA would have known that the second camera could be pointed at any object or scene that the first user wanted to take an image of, including but not limited to a second person or group of persons. EX1004, ¶¶159-61 (explaining use of *Harma*'s mobile phone to capture images in split screen). As such, *Harma* discloses this element, at least under PO's apparent interpretation.

2. Claim 19

i. 19[a]

See 18[b]-18[e]. *Harma* discloses these limitations. As shown in 18[b]-18[e], the first and second sides of the mobile phone (containing each camera) are on opposite sides of the device. *See, e.g.*, EX1008, Figs. 5a-5b, 6:4-16 ("...the second camera 7 of the mobile phone 1 *is placed on the opposite side* of the mobile phone with respect to the first camera 4.").

3. Claim 20

i. 20[a]

See 18[c]-18[e]. As explained above, the Petition relies on cameras as meeting the claimed input devices of Claim 18.

C. Ground 4: Claims 18-21 are rendered obvious over *Nagasawa* in view of *Harma*.

1. Rationale and Motivation to Combine *Nagasawa* with *Harma*.

A POSITA would have been motivated to combine *Nagasawa* with *Harma* to arrive at the claimed invention. EX1004, ¶¶164-182. *Nagasawa* and *Harma* are in

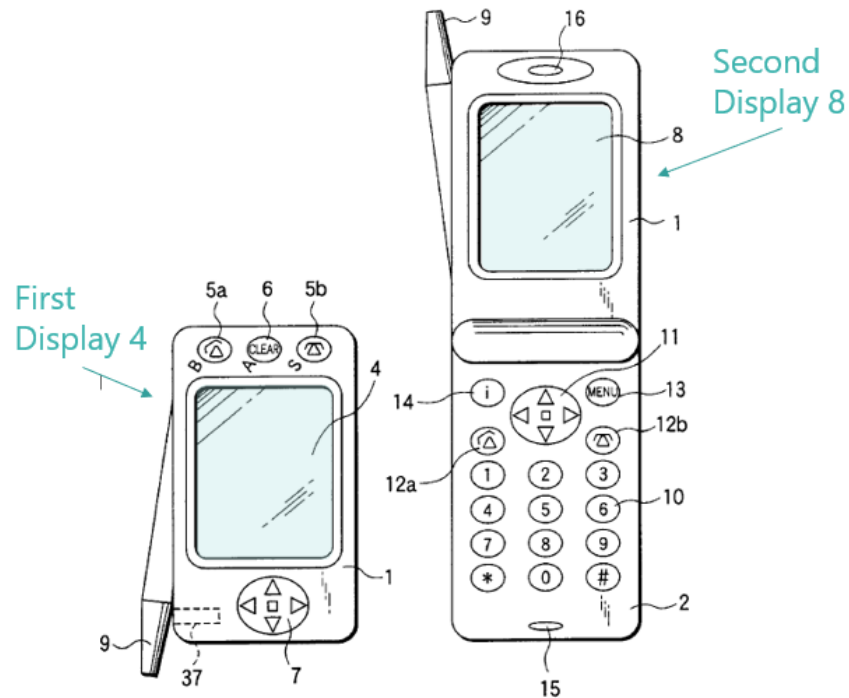
the same field of endeavor—mobile telephones—and both directed to improvements in the multimedia feature sets of such devices. EX1007, 1:6-9, 1:24-27; EX1008, Abstract, 1:1-5, 1:21-24. *Nagasawa* and *Harma* provide complementary enhancements to mobile telephones, aimed at enhancing multimedia capabilities and adding features extending the phone’s use beyond conventional telephone calls. EX1007, 1:24-27; EX1008, 1:25-28. The POSITA was motivated by market forces and industry trends towards “convergence” to combine multimedia capabilities of phones, cameras, and computers into a single handheld device to improve manufacturing efficiency and appeal to market demand for such integrated/multifunctional devices, and much commercial development activity was devoted to this task at the time. EX1004, ¶¶58-79, 164, 173; EX1023-EX1024.

Nagasawa, for example, adds a second display to the outer surface of a foldable telephone, which allows gaming when the phone is folded. EX1007, 3:66-4:16, 1:38-43. Meanwhile, *Harma* adds a second camera to the phone to enhance “capturing still pictures and video clips.” EX1008, 1:21-28. The POSITA would have been motivated to combine these multimedia enhancements into a single device to obtain the benefits of both of these multimedia features and would have expected success in doing so, as the devices would continue to perform their described functions with the predictable benefits described in the references when combined into a single device. EX1004, ¶165. A POSITA would also have known how to

combine multiple cameras into a housing of a foldable telephone. *Id.*, ¶165; *see* EX1019, [0001] (implementing “first camera 303” and “second camera 308” in the “same housing” of a foldable phone), pp.18-19 (Figs. 1-2).

To illustrate, *Nagasawa* is concerned with providing a foldable mobile telephone having the same features as conventional mobile telephones. EX1007, 1:24-27; EX1004, ¶166. The advantages of foldable mobile telephones (aka “flip phones”) were well-known to POSITAs at the time. *See* EX1004, ¶166; EX1010, 1:9-17 (describing ability to transport folded phones having “large-screen” displays in a “compact size”). POSITAs would have been motivated to add new capabilities to flip phones—such as multiple displays and cameras, as was known in the art. *See, e.g.*, EX1004, ¶166; EX1010, 2:2-24 (placing a “display on the outer surface” of a foldable phone to enable features “with the body folded”); EX1019, [0001] (describing a foldable phone having “multiple cameras in the same housing” to enable video calling), pp.18-19 (Figs. 1-2).

Nagasawa’s folding portable telephone includes two displays, one on an inner surface used in an unfolded position and one on the outer surface used to play games in the folded position. EX1007, 3:49-4:16. *Nagasawa* illustrates the foldable phone in a folded (below, left) and unfolded position (below, right) in Figures 11B-11C (blue annotations highlight displays 4 and 8):



EX1007, Figs. 11B-11C.

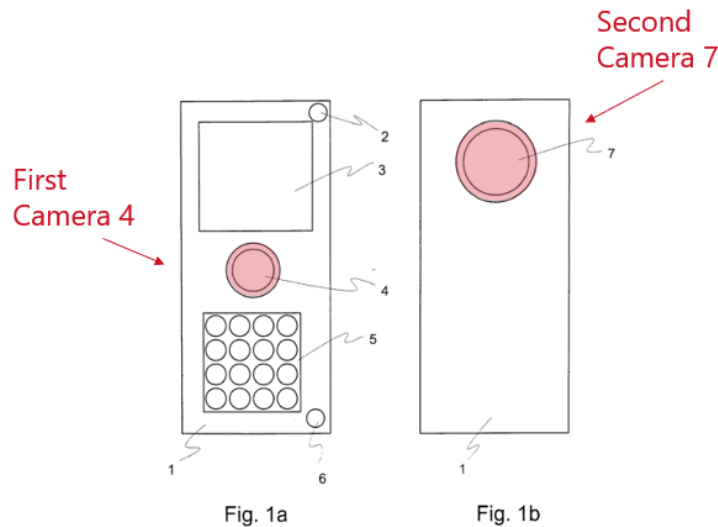
Nagasawa “aims at providing folding portable telephone apparatus having the same operability and compact shape (form) and standard features as portable telephone apparatus.” EX1007, 1:24-27. *Nagasawa* further teaches using a camera for videoconferencing. EX1007, 7:37-40 (“Video conference display may be provided ... with a small-sized TV camera 53 at the hinge.”). *Nagasawa* thus includes standard features available on other portable telephones (like cameras and videoconferencing), motivating the POSITA to look for additional standard features to include in an improved device. EX1004, ¶168.

Harma provides teaches the benefits of two opposing cameras in a conventional telephone, the “second camera with a capturing direction essentially

different from the capturing direction of the first camera.” EX1008, 1:25-28.

Harma’s mobile phone has two cameras, one on the front and one on the back. *Id.*,

Figs. 1a-1b (**red** annotations added).



Harma’s mobile phone “enables capturing still pictures and video clips, for instance in a video conference, in a versatile and easily applicable fashion.” EX1008, 1:21-23. *Harma* further teaches “filming both the user and the [user’s] surroundings” during a video conference while avoiding the downside of prior systems where “the camera must be turned in order to change the capturing direction.” *Id.*, 1:6-2:5; EX1004, ¶170. An example in *Harma* shows combined video streams from the two cameras capturing the user (imaged via the front camera, annotated in **blue**) and the user’s surroundings (imaged via the rear camera, annotated in **red**). EX1008, 1:6-2:5, Figs. 3a-3b, 5:7-13; EX1004, ¶¶171-172 (explaining the benefits of this arrangement). This is illustrated in Figure 3a below:

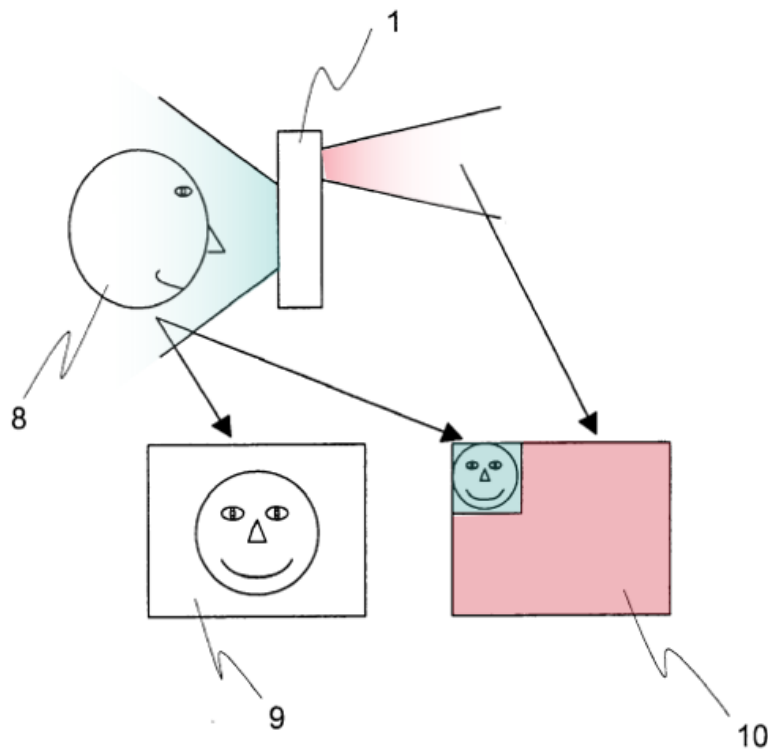


Fig. 3a

(1) The POSITA would have been motivated to Enhance the Base System of *Nagasawa* to Obtain the Express Benefits of *Harma*.

The POSITA would have been motivated to enhance *Nagasawa*'s videoconferencing capability to obtain the benefits of *Harma*'s dual cameras. EX1004, ¶173. Indeed, the POSITA was well aware of the ability to include dual cameras in a flip phone and it was well known to do so. *Id.*; see generally EX1019. The POSITA would have immediately recognized the benefits of doing so. EX1004, ¶173. For example, the POSITA would have been motivated to implement the two cameras facing different directions, taught by *Harma*, in the base system of *Nagasawa* to obtain the enhanced two-camera features described by *Harma*.

EX1004, ¶173. This would have provided the system of *Nagasawa* discussed above (e.g., a foldable phone with two displays), with the added benefits of two cameras taught by *Harma*, one on each side of the device. EX1004, ¶173. For example, this would have imbued the foldable telephone of *Nagasawa* with the benefits of filming both the user and the surroundings and would have allowed the display of a split-screen image containing the captures from both cameras. EX1004, ¶173.

This would have had obvious marketing and commercial benefits, as it would have provided the ability to market an enhanced version of a portable telephone that came in a foldable form that included two displays including support for a gaming mode, and two cameras for the ability to display split-screen images and conduct video conferences without the need to turn the camera (or phone) when attempting to capture images of the user's surrounding during a video conference—precisely the benefits taught in *Harma*. EX1004, ¶173. Thus, a POSITA would have been motivated to add the beneficial feature of dual cameras as taught in *Harma* to improve *Nagasawa*'s system and would have recognized that *Nagasawa*'s system was ready to be improved via the addition of the *Harma*'s second camera. EX1004, ¶173.

(2) A POSITA Would Have Had a Reasonable Expectation of Success.

A POSITA would have a reasonable expectation of success in adding *Harma*'s cameras to the base system of *Nagasawa*. EX1004, ¶¶174-75. Both *Harma*

and *Nagasawa* are similar telephone devices including radio transmission and reception, keypad, controller, microphone, speaker, and displays. EX1008, 5:24-35, Fig. 4; EX1007, Figs. 11a-11c, 7:5-51. Adding cameras, and any necessary supporting hardware and software modifications to *Nagasawa*'s phone, was well within the skill of a POSITA, as shown by *Harma* itself, which describes adding those cameras to a mobile phone for improved videoconferences. EX1004, ¶¶174-75.

For example, a POSITA would have known that camera features implemented on *Harma*'s mobile phones could easily be implemented on *Nagasawa*'s foldable telephone. EX1004, ¶¶174-75. The POSITA was already familiar with implementing multiple cameras on a folding telephone, as evidenced by the success of others in doing so. EX1019, [0001], pp.18-19. It would have merely been a matter of designing the housings of *Nagasawa* and/or obtaining an appropriately sized camera to fit the additional components within *Nagasawa*'s form factor. EX1004, ¶¶174-75. This would have taken no more than basic electrical and mechanical engineering well within the skill of a POSITA. EX1004, ¶¶174-75. Moreover, it was well-known that cameras existed that could easily fit within a foldable telephone of the type taught by *Nagasawa*. EX1019, [0010]-[0012], pp.18-19 (Figs 1-2). A POSITA would have expected success in adding cameras to *Nagasawa*'s flip phone, and specifically, in putting cameras on opposite sides of the device as taught by

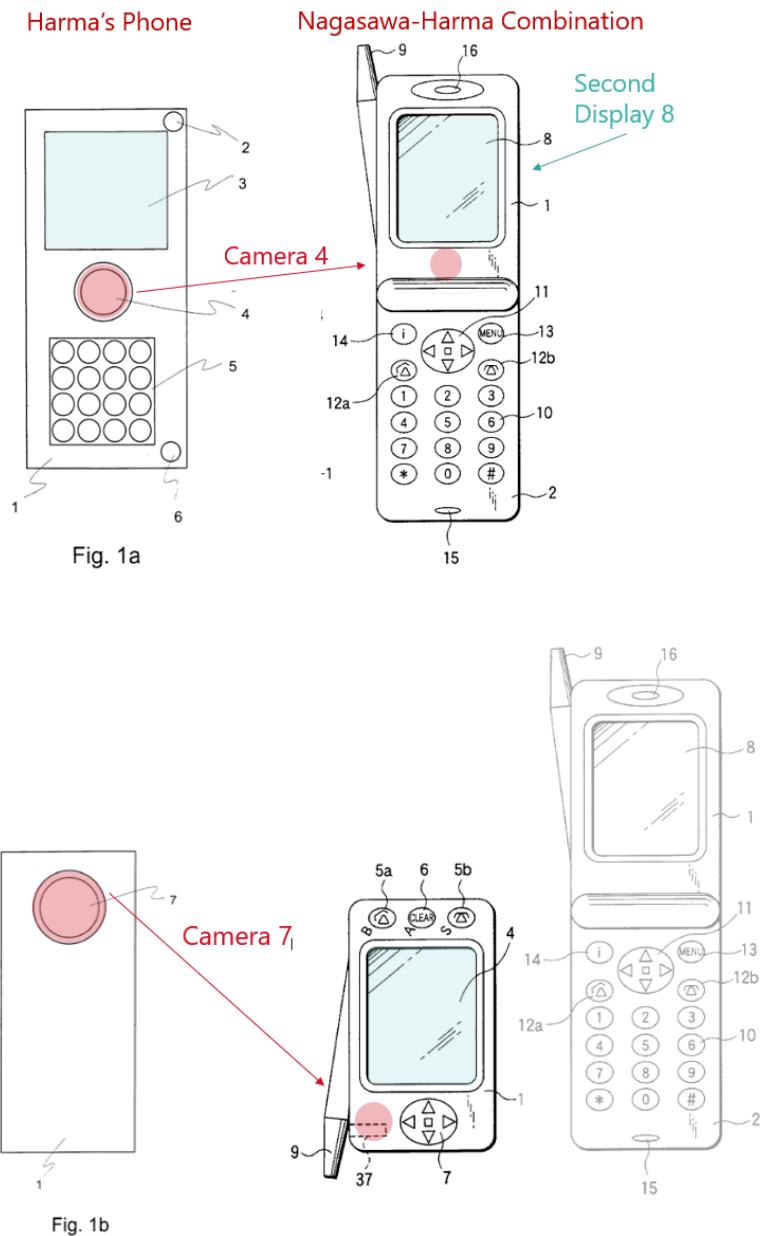
Harma. EX1004, ¶¶174-75. Indeed, this positioning is consistent with how the POSITA had already placed opposing cameras in similar foldable telephones. *See* EX1019, [0010]-[0012], pp.18-19 (Figs. 1-2) (placing “camera 303” and “camera 308” on opposite sides).

(3) Predictable Results.

A POSITA would have achieved the combination of *Nagasawa* and *Harma* with predictable results. EX1004, ¶¶176-182. For example, *Harma* teaches “a display with a given display direction” that is “the same as the capturing direction of the first camera.” EX1008, 2:6-8, Figs. 2-3b. *Harma* further teaches that this camera captures the user’s image, while the other captures images facing away from the user. *See* EX1008, Figs. 5a-5b, 1:25-29, 5:7-13. *Harma*’s second camera faces opposite to the first camera. *Id.* *Harma*’s second camera also captures images or video of the scene a user is viewing. EX1008, 1:25-2:3, Figs. 2-3b.

This would have had the predictable result of a POSITA placing the cameras at or near the locations of the displays in *Nagasawa*. EX1004, ¶177. For example, the POSITA would have been motivated to place *Harma*’s first camera on the same side as *Nagasawa*’s first display and *Harma*’s second camera on the same side as *Nagasawa*’s second display. EX1004, ¶177. With respect to *Harma*’s camera 4 and camera 7, combining *Harma* with *Nagasawa* would have predicably resulted in the

following combined system⁷:



EX1008, Figs. 1a-1b (annotated); EX1007, Figs. 11B-11C (annotated).

⁷ Jack 37 of *Nagasawa's* foldable phone is on the lower clamshell, as shown in Figure 11A, and would not interfere with the camera.

The obvious addition of *Harma*'s camera 4 is consistent with *Nagasawa*'s teaching regarding a camera: to add a camera to the hinge between the first and second case body, and it would have been equally obvious to place a camera there. EX1004, ¶178; EX1007, 7:37-40. Given that *Harma* teaches adding a camera to any appropriate location (EX1008, 6:4-11), a POSITA would have been motivated to place camera 4 on the inside of the upper clamshell in *Nagasawa*'s flip phone. EX1004, ¶178. *Harma* teaches that its first camera has a "wide angle of view" and a short focal length for producing a "sharp image while capturing at a short distance," which provides better imaging of a user at a short distance facing the camera. See EX1008, 4:32-36, Figs. 2-3a. A POSITA would know from this teaching to place the first camera on the inside of *Nagasawa*'s phone facing the user when the flip phone is open. EX1004, ¶178. *Harma* also teaches that the first camera "may be located in some other spot of the mobile phone," and a POSITA would have known that a first camera placed at any of multiple locations on the inside of the upper clamshell would face the user when the phone is open. EX1008, 6:4-11; EX1004, ¶178.

With respect to *Harma*'s camera 7, the POSITA would have understood that the placement annotated above be an analogous location to *Harma*'s when the foldable telephone of *Nagasawa* is in an opened position. EX1004, ¶179. A POSITA adding *Harma*'s camera 7 to *Nagasawa*'s foldable telephone would have been

motivated to place *Harma*'s camera 7 on the outer surface of *Nagasawa*'s case body 1. EX1004, ¶179. *Harma* second camera has a "narrower angle of view" and a longer focal length for producing a "sharp image while capturing from an essentially longer distance than the first camera," for better imaging of scenery viewed by the user. *See* EX1008, 2:31-35, 4:36-5:4, Figs. 2-3a.

A POSITA would know from this teaching to place second camera 7 on the outside of *Nagasawa*'s phone, facing the direction the user is looking, when the foldable telephone was in the unfolded position illustrated by *Nagasawa*'s Figure 11C. EX1004, ¶180. For example, it would have been obvious to the POSITA that second camera 7 would be facing away from the user when the telephone is unfolded, and this would have been a desirable position for taking longer shots of scenery with the second camera, as taught by *Harma*. EX1004, ¶180.

The POSITA would have been further motivated to place the cameras as shown above because foldable telephone users commonly held their phones in the unfolded position at the bottom of the device. EX1004, ¶181; *see, e.g.*, EX1007, Fig. 5B (showing user holding phone at bottom). The POSITA would have understood that placing cameras in the top case body of *Nagasawa*'s device would have prevented the cameras from being obscured by the user's hand, as illustrated in *Nagasawa*'s Figure 5B. ¶181.

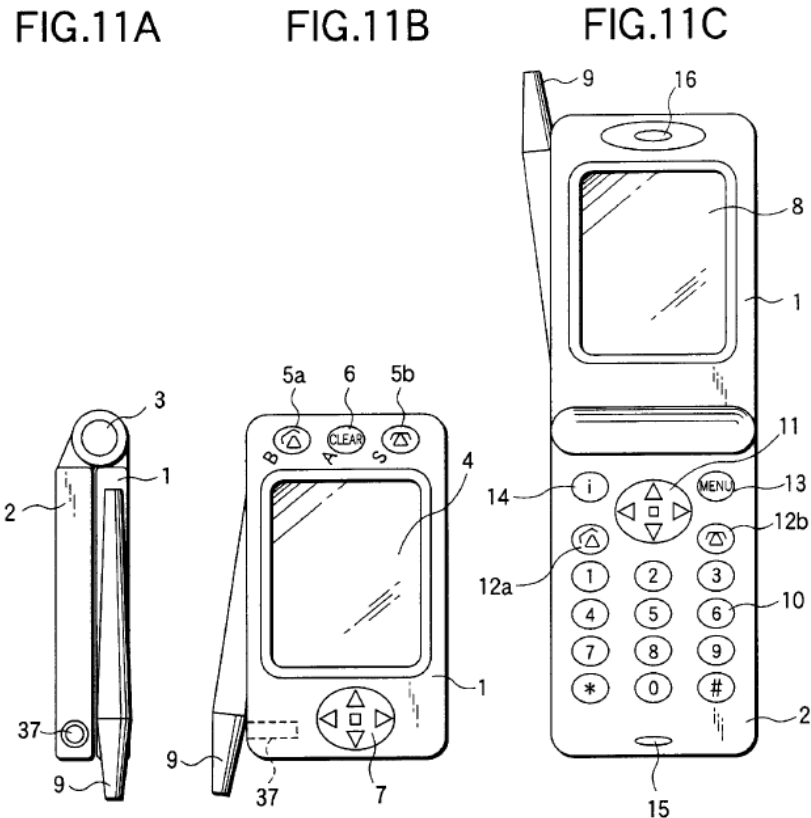
Accordingly, a POSITA would have achieved predictable results in improving

Nagasawa's base system with a camera on each side of the upper portion of the foldable telephone. EX1004, ¶¶176-82. A POSITA adding *Harma*'s cameras to *Nagasawa*'s phone would predictably use those cameras to achieve a split-screen view. See EX1008, Fig. 3a, 5:7-14. The predictable results of combining *Harma* with *Nagasawa* is further confirmed by the success of others, who had already placed the cameras in similar locations on opposing sides of a flip phone's upper clamshell. EX1019, pp.18-19 (Figs. 1-2).

2. Claim 18

i. 18[p]

As it relates to Ground 4, a POSITA would have been aware of *Harma*'s teaching described in Ground 3. See *supra* §VI.B.1.i; EX1004, ¶¶141, 183, n.13. *Nagasawa* also discloses a foldable telephone is a “communication service device” operable with a radio cellular network, which is a type of “communication network.” EX1007, 1:29-44, 4:61-5:10, Figs. 5-6, 11A-C; EX1004, ¶183.



EX1007, Figs. 11A-11C.

Nagasawa's foldable telephone includes a “folding main body, an antenna, radio communications means, controller, storage means, folding/unfolding state detector, display, operation means, a transmitter and a receiver.” EX1007, 1:29-33. It further includes a “first display 4” on “the outer surface of the first case body 1,” and a “second display 8” on the “inner surface of the first case body.” EX1007, 3:49-55, 3:66-4:1.⁸

⁸ A POSITA would have understood or at least found it obvious to use *Nagasawa's* embodiments together, as *Nagasawa* Figures 11A-11C (the “third embodiment”)

Nagasawa teaches that the “radio communications means” relate to the folding telephone’s “radio communications feature.” EX1007, 1:5-9, 1:29-35. *Nagasawa* further discloses its foldable telephone includes internal components such as a “radio communications,” which would obviously be included in *Nagasawa*’s various foldable telephone embodiments, including that of Figures 11A -11C (above). *Id.*, Fig. 6, 4:61-5:3; EX1004, ¶185.

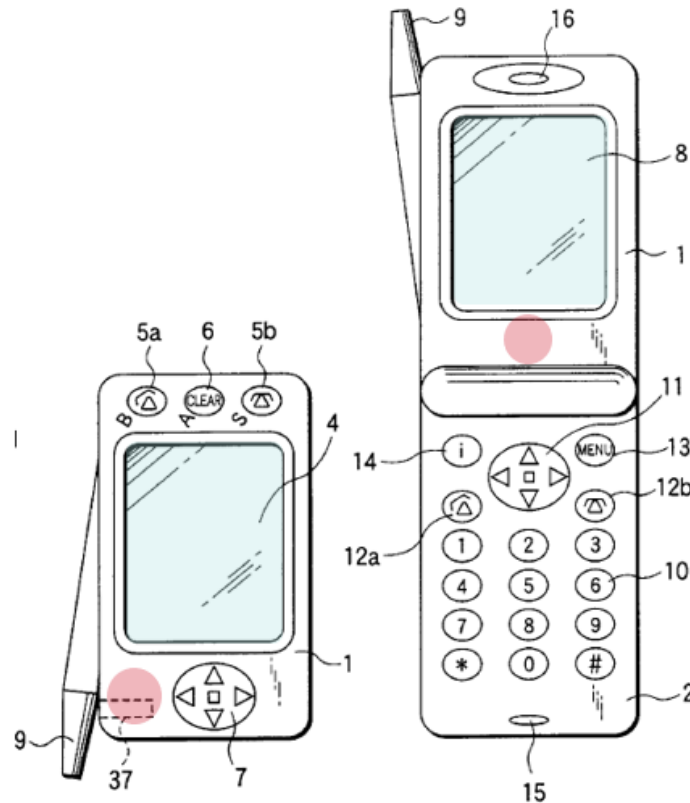
Harma discloses that the “invention relates to *a mobile phone* comprising a camera.” EX1008, 1:1-5. *Harma*’s mobile phone includes “radio transmitter/receiver 20” which “functions as in known mobile phones.” EX1008, 5:24-30. A POSITA would have understood that mobile phones including the radio components described by *Nagasawa* and *Harma* were for cellular communication and operable with radio cellular networks. EX1004, ¶186.

A POSITA would have been motivated to modify *Nagasawa*’s foldable telephone to include the camera features in *Harma*’s mobile phone for the reasons discussed above. *Supra* §VI.C.1; EX1004, ¶¶164-182. *Nagasawa*’s foldable

rely on the description of Figure 1 (the “first embodiment”), and the numbered elements of the Figures relied on herein are the same. *See* EX1007, 7:5-18; EX1004, ¶184. *Nagasawa* explains that the only difference between the first embodiment and the third embodiment is the location of antenna 9. *See* EX1007, 7:5-8.

telephone as modified according to the teachings of *Harma* is illustrated below (*Nagasawa*'s Figures 11A-11B highlighted to illustrate the displays in **blue** and the obvious additions of *Harma*'s opposing cameras in **red**):

Nagasawa-Harma Combination



The *Nagasawa-Harma* combination thus discloses a communication service device operable with a communication network. EX1004, ¶188.

ii. 18[a]

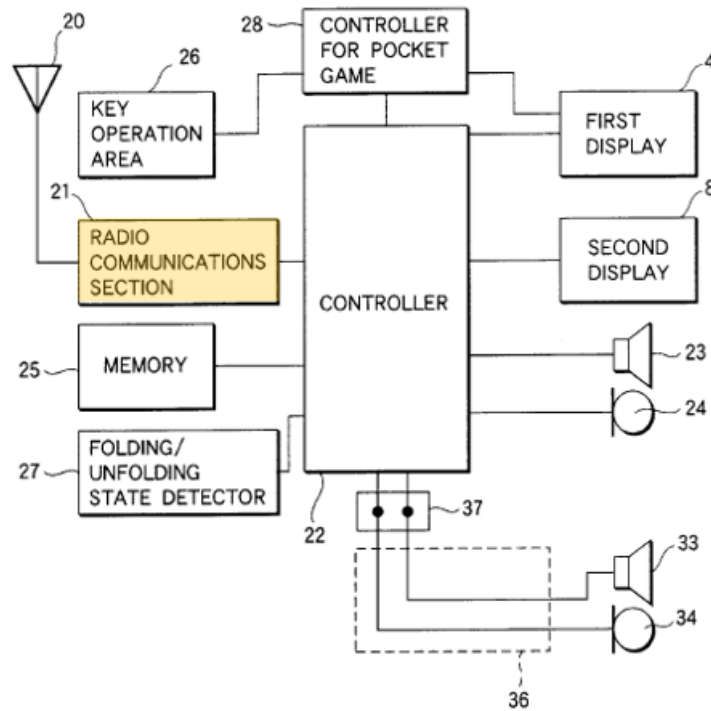
See 18[p]. As it relates to Ground 4, a POSITA would have been aware of *Harma*'s teaching described in Ground 3. See *supra* §VI.B.1.ii; EX1004, ¶¶ 141, 193, n.13. The *Nagasawa-Harma* combination comprises a foldable telephone,

which is a user communication device configured to receive and transmit information over a communication network. EX1004, ¶189. Both *Nagasawa* and *Harma* describe or at least render obvious a user using a mobile phone to receive and transmit information over a communication network. EX1007, 6:54-56; EX1008, 1:21-23, 2:16-23.

Nagasawa's foldable telephone is a user communication device configured to receive and transmit information over a communication network at least because it can be used to communicate voice communications between a user of the device and a remote party over a radio network. EX1007, 4:61-5:15.

Nagasawa discloses an embodiment of the disclosed foldable telephone that includes a radio communications section 21 (shown below in orange), which enables the telephone to transmit and receive information over the radio. EX1007, Fig. 6, 4:61-5:15. The POSITA would have recognized that various components of *Nagasawa*'s Figure 6 embodiment would be common and applicable to any of the disclosed embodiments of *Nagasawa*'s foldable telephone, including the embodiment in Figures 11A-11C. EX1004, ¶191. At a minimum, it would have been obvious to include the components described in Figure 6 (below) in the embodiment of Figures 11A-11C of *Nagasawa*. EX1004, ¶191, n.14.

FIG.6



Harma's phone contains a radio transmitter/receiver 20 that "functions as in known mobile phones." EX1008, 5:24-30. *Harma* further suggests that mobile phone can be used for "video conferencing." *Id.*, 1:4-5 ("More and more often mobile phones include a camera that enables capturing still pictures and video clips, as well as their use in video conferences"). Likewise, *Nagasawa* suggests the use of a camera and a videoconferencing display. EX1007, 7:37-40. Videoconferencing is another form of communication that involves receiving and transmitting information over a communication network. EX1004, ¶193.

The POSITA would have found it obvious to include videoconferencing capabilities in the combined *Nagasawa-Harma* phone for the reasons discussed

above (*supra* §VI.C.1), further rendering obvious the claimed device transmitting and receiving information over a communication network via video conference. EX1004, ¶194; EX1017, pp.18 (explaining that “video conferencing is the capacity to exchange live video between two sites”), 116 (illustrating in Figure 6-1 audio calling from PC to PC via a LAN and/or Internet), 137-38 (explaining that videoconferencing may be performed “across a network” in the same manner as audio communications illustrated in Figure 6-1), 140-43 (explaining various network options for performing videoconferencing).

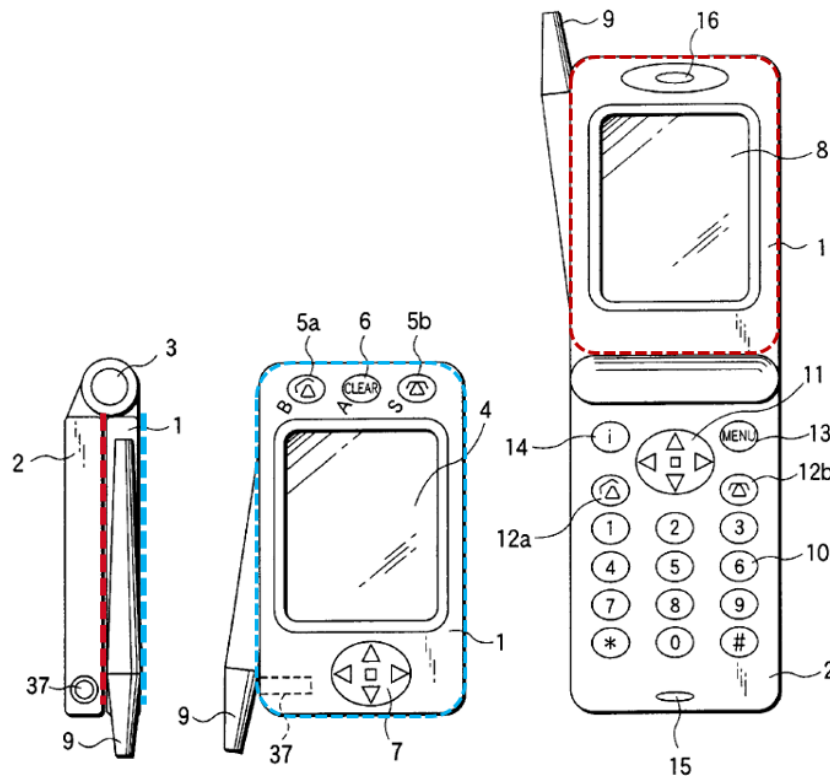
iii. 18[b]

As it relates to Ground 4, a POSITA would have been aware of *Harma*’s teaching of *Harma* described in Ground 3. *See supra* §VI.B.1.iii. The *Nagasawa-Harma* combination discloses this limitation. Specifically, *Nagasawa*’s foldable telephone includes a first case body 1 (corresponding to the claimed “housing”) that has a first side and a second side. EX1007, Figs. 11A-11C, 3:49-53. First case body 1 including a first side and a second side is shown in Figures 11A-11C in multiple views, with Figures 11A and 11B showing two views of the telephone in a folded position and Figure 11C showing the phone in an unfolded position. *See id.*, 3:11-20, Figs. 11A-11C (annotated below to highlight the **first side** and **second side** of first case body 1).

FIG.11A

FIG.11B

FIG.11C

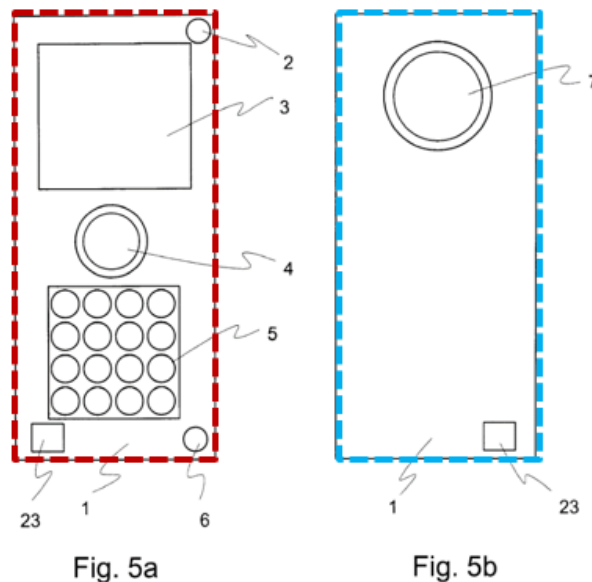


First case body 1 is the housing of the telephone highlighted in red and blue, above, and it contains outer display 4 shown in Figure 11B and inner display 8 shown in Figure 11C. EX1007, 4:66-5:3; EX1004, ¶¶195-96. As described by *Nagasawa*, a “first case body 1 and a second case body 2 are coupled via a hinge 3 so that the first case body 1 and the second case body 2 can be folded or unfolded via the hinge 3.” EX1007, 3:51-53.⁹ *Nagasawa* refers to the second side of first case body 1 that is visible when the telephone is folded as the “outer surface of the first case body 1.” *Id.*, 3:53-55. Similarly, *Nagasawa* refers to the first side of first case

⁹ See *supra* n.8.

body 1 as the “inner surface of the first case body” *Id.*, 3:66-67. Based on this description of the Figures, the POSITA would have understood that unfolding the telephone from the position shown in Figures 11A-11B would result in the position shown in Figure 11C, and the **second side** shown in Figure 11B would be flipped and on the opposite side (*i.e.*, the side facing into the page) as the **first side** shown in Figure 11C. EX1004, ¶¶197-98. For example, navigation key 7, shown at the bottom of the first case body in Figure 11B would be facing away and at the top of the first case body in Figure 11C. EX1007, 3:53-60; EX1004, ¶198.

Harma discloses a mobile phone comprising a housing with a **first side** and a **second side**. EX1008, Figs. 5a-5b, 6:4-16; *see supra* n.7 (explaining obviousness of combining *Harma*’s embodiments). *Harma* illustrates the phone’s front side and back side in Figures 5a and 5b (annotated below to highlight the **first side** and **second side**):



As described by *Harma*, “Figure 5a is a schematical illustration of a mobile phone 1 ... seen at the front. On the **front side** of the mobile phone, **i.e. on the side that faces the user while operating**, there is a loudspeaker 2, a display 3, a first camera 4, a keypad 5, a microphone 6 and an optical viewfinder 23.” EX1008, 6:4-8. Likewise, “Figure 5b is a schematical illustration of a mobile phone 1 ..., viewed at **the back**. In this preferred embodiment, the second camera 7 of the mobile phone 1 is placed on the **opposite side** of the mobile phone with respect to the first camera 4.” EX1008, 6:12-16.

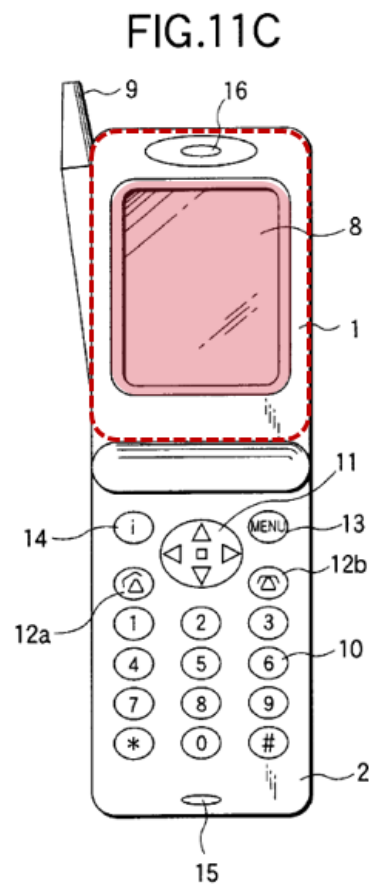
The POSITA would have found it obvious to combine the cameras of the first and second sides of *Harma* with the first and second sides of *Nagasawa*, for the reasons explained above. *Supra* §VI.C.1; EX1004, ¶¶164-182, ¶201.

iv. 18[c]

As it relates to Ground 4, a POSITA would have been aware of *Harma*’s teaching described in Ground 3. *See supra* §VI.B.1.iv. The *Nagasawa-Harma* combination discloses this limitation. Specifically, *Nagasawa* discloses that the **first side** (*i.e.*, inner side) of first case body 1 includes **display 8**, allowing the user to output visual information. EX1007, 4:10-16. *Harma* discloses that its **first side** (*i.e.*, front side) includes a **camera** (*i.e.*, first input device) and **display** (*i.e.*, first display device), which allows the user to input and output visual information. EX1008, Figs. 5a-5b, 6:4-16, 1:31-2:1 (explaining that “the cameras are arranged on opposite sides

of the mobile phone”). As discussed, it would have been obvious to incorporate a camera from the **first side** of *Harma* into the **first side** of *Nagasawa*. See *supra* §VI.C.1; EX1004, ¶¶202-210.

Nagasawa illustrates **display 8** of its **first side** in Figure 11C, highlighted in **red** below:



Nagasawa confirms that **display 8** or display 4 allow the user to output visual information, such as telephone numbers, caller information, game information, and video conference information. EX1007, 4:66-5:3 (“The controller 22 displays the received information such as telephone numbers ... on the second **display 8** on the

inner surface of the main body.”), 5:51-53 (“[C]aller information is displayed on the second **display 8**.”), Cl.1 (claiming “a game display for displaying the pocket game”), 7:37-40 (“Video conference display may be provided ...”) ¹⁰. The POSITA would have known to configure and/or modify the displays of *Nagasawa* to display any number of images in addition to telephone numbers. EX1004, ¶205 (describing display configurations for displaying images); *see, e.g.*, EX1010, 1:21-23 (describing motivation to access “text and graphics” in a folded state); EX1019, [0034], p.28 (Fig. 12) (configuring displays to display video). For example, it would have been obvious to configure *Nagasawa*’s displays to display images from cameras consistent with the teachings of *Harma*. EX1004, ¶205; EX1007, Abstract

¹⁰ *Nagasawa* describes “[v]ideo conference display” in a “fifth embodiment.” EX1007, 7:33-40. A POSITA would have known to provide for “[v]ideo conference display” on any display of *Nagasawa*, particularly in light of *Harma*’s teaching to use displays for video. EX1004, ¶204; EX1008, 1:4-5, 1:21-23, 2:16-23, Fig. 3a. This teaching is thus applicable to *Nagasawa*’s Figures 11A-11C. Similarly, a POSITA would have understood, or found it obvious, that *Nagasawa*’s display 8 could display the same information as display 4, or vice versa. EX1004, ¶204; EX1007, 4:66-5:3. For example, a user could play a game on either display. *See, e.g.*, EX1007, 1:12-20 (describing use of “display 8” for a pocket game).

(disclosing “liquid crystal display ... on the outer surface” of the foldable phone), 1:16-20 (disclosing “liquid crystal display 8” on the inner surface of the foldable phone); EX1008, 2:10-11 (disclosing “liquid crystal display”), Fig. 3a (illustrating display of camera images on display).

Harma discloses a mobile phone comprising a housing with **camera 4** and **display 3** on a **first side**. EX1008, Fig. 5a (annotated below), 6:4-11.

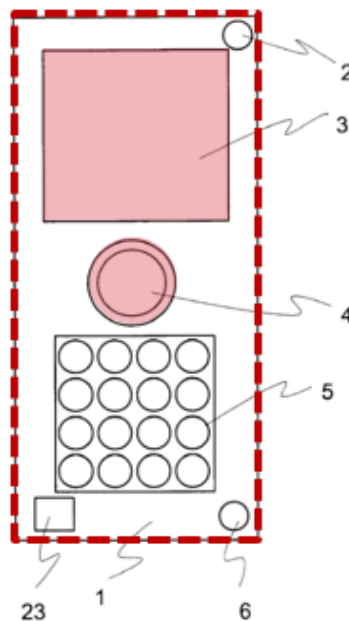


Fig. 5a

As explained by *Harma*, “Figure 5a is a schematical illustration of a mobile phone 1 ... seen at the front. On the **front side** of the mobile phone, ... there is a loudspeaker 2, a **display 3**, a **first camera 4** Obviously the first **camera 4** may be located in some other spot of the mobile phone, for instance behind the **display 3**, so that in the **display 3**, there is provided an aperture for the lens of the **camera**

4.” EX1008, 6:4-11.

Harma further explains that a user may input and output visual information via **display 3** and **camera 4**. EX1008, 5:7-23, Figs. 3a-3b. *Harma*’s mobile phone is “configured to allow the at least one user to ... output visual information,” as claimed, because *the user may output images or video from either first camera 4, second camera 7, or both cameras on display 3*. EX1008, 4:32-36, 5:10-14 (on the display “is seen a split-screen image composed of the images of the first and second camera”), 5:31-35 (describing “show[ing] on the display 21 an imaged captured by the camera 12 or the camera 13 or both” or “combin[ing] on the display 21 an image produced by the camera 12 or the camera 13 or both with an image received by radio by the radio receiver 25”), Figs. 2, 4, 5a-5b; EX1004, ¶208.

As discussed above, it would have been obvious to modify *Nagasawa* to include the first and second cameras described by *Harma*. *Supra* §VI.C.1; EX1004, ¶209. For example, the POSITA would have had ample reason to combine *Harma* with *Nagasawa* such that **camera 4** from the first side of *Harma* resides on the first side of *Nagasawa*’s case body 1, along with *Nagasawa*’s display 8. EX1004, ¶209. This modification is illustrated below:

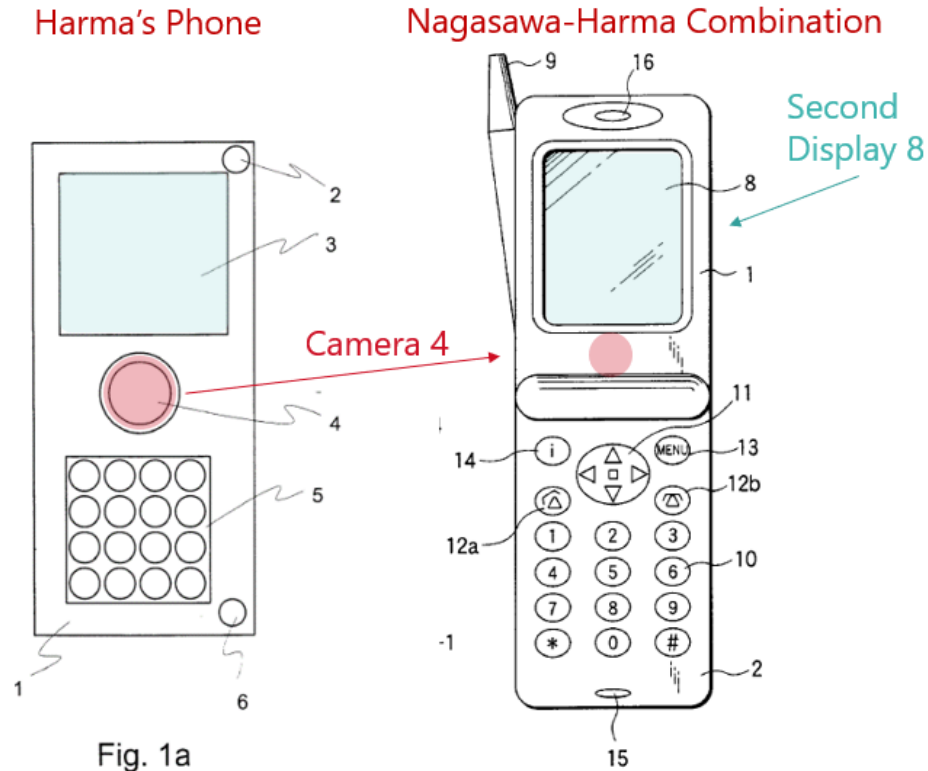


Fig. 1a

EX1008, Fig. 1a; EX1007, Fig. 11C.

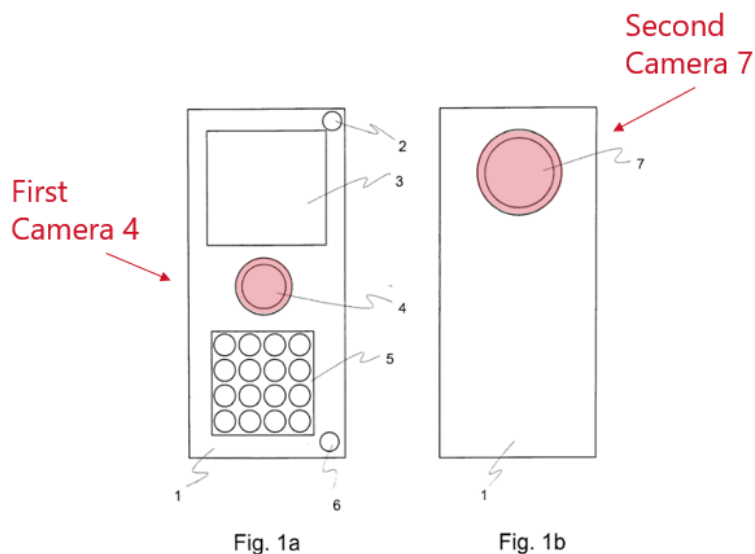
The *Nagasawa-Harma* combination includes a first input device (**camera 4**) and first display device (**display 8**) configured to allow the user to input and output visual information (for example, to display images captured by **camera 4** on **display 8** as taught by *Harma*) wherein the at least one first input device and first display device resides on the first side of the housing (*i.e.* on the inner surface of case body 1, as shown above). EX1004, ¶210.

v. **18[d]**

See 18[c]. As it relates to Ground 4, a POSITA would have been aware of *Harma*'s teaching described in Ground 3. See *supra* §VI.B.1.v. The *Nagasawa-*

Harma combination discloses this limitation. Specifically, *Harma* discloses a **second camera 7** (*i.e.*, “at least one second input device” as claimed) that is configured to capture images (*i.e.*, “input visual information” as claimed), where the **second camera 7** resides on the second side of the housing. EX1008, 1:31-2:1, 5:7-23, 4:32-5:6, 5:10-14, 5:31-35, 6:4-11, Figs. 2-5b; EX1004, ¶211.

Harma’s **second camera 7** is illustrated below, on the opposite side of the housing as the **first camera 4**:



EX1008, 6:4-16 (“Figure 5b is a schematical illustration of a mobile phone 1 according to a third embodiment of the invention, **viewed at the back**. In this preferred embodiment, **the second camera 7** of the mobile phone 1 is placed **on the opposite side of the mobile phone** with respect to the **first camera 4**.”). *Harma*’s **second camera 7** is “configured to input visual information,” as claimed, because the user may use **second camera 7** to capture images or video. EX1008, 4:36-5:4,

Figs. 2-3b.

Harma further explains that a user may input and output visual information via display 3 and **camera 7**. EX1008, 5:7-23, Figs. 3a-3b. *Harma*'s mobile phone is "configured to allow the at least one user to ... output visual information," as claimed, because the *user may output images or video from* either **first camera 4**, **second camera 7**, or **both cameras** on display 3. EX1008, 4:32-35 (describing that the first camera "produces a sharp image"), 5:9-13 (on the display "is seen a split-screen image composed of the images of the first and second camera"), 5:31-35 (describing a "control block" that "show[s] on the display 21 an imaged captured by the camera 12 or the camera 13 or both" or may "combine on the display 21 an image produced by the camera 12 or the camera 13 or both with an image received by radio by the radio receiver 25"), Figs. 2-4, 5a-5b, EX1004, ¶214.

As discussed above, it would have been obvious to modify *Nagasawa* to include the first and second cameras described by *Harma*. See *supra* §VI.C.1; EX1004, ¶215. For example, the POSITA would have had ample reason to combine *Harma* with *Nagasawa* such that the second camera 7 from the second side of the mobile phone of *Harma* resides on the second side of the housing (*i.e.*, on the outer surface of first case body 1) of *Nagasawa*. EX1004, ¶215. This modification is illustrated below:

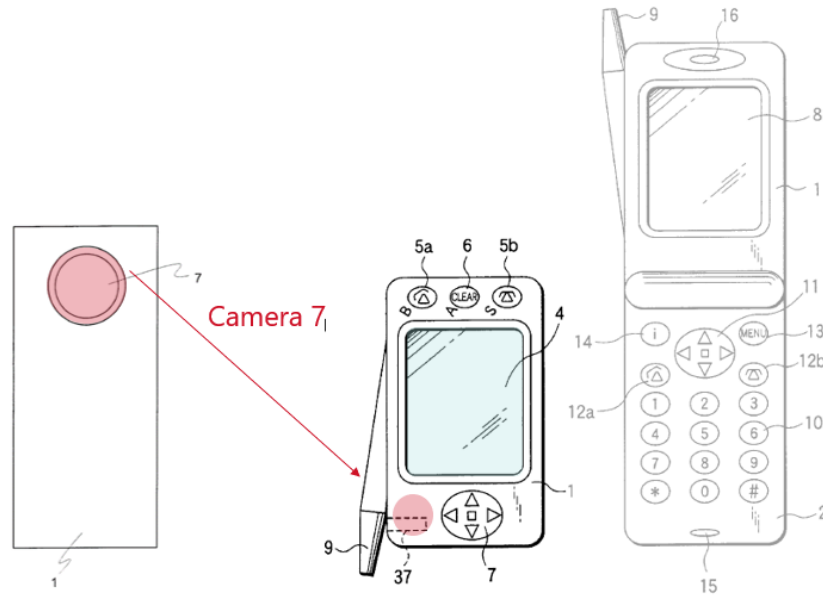


Fig. 1b

EX1008, Fig. 1b (annotated); EX1007, Figs. 11B-11C (annotated).

The *Nagasawa-Harma* combination includes a second input device (**camera 7**) configured to allow the user to input and output visual information (for example, to display images captured by **camera 7** on display 4 as taught by *Harma*) wherein the at least one second input device and first display device resides on the second side of the housing (*i.e.*, on the outer surface of case body 1 as shown above). EX1004, ¶216.

vi. 18[e]

See 18[c]-18[d]. As it relates to Ground 4, a POSITA would have been aware of *Harma*'s teaching described in Ground 3. See *supra* §VI.B.1.vi. The *Nagasawa-Harma* combination discloses these limitations, at least under PO's apparent interpretation of these limitations, which includes that at least one user accesses a

first camera and first display device from the first side of the housing at the same time as a second camera from the second side of the housing when a single user views the feeds from two opposing cameras on a split screen. *See supra* §VI.A.1.vi(2) (explaining PO’s interpretation of these limitations). Relying on PO’s claim interpretation, *Harma* discloses that two cameras (*i.e.*, “first and second input devices”) are carried by the mobile phone in an orientation to allow a user to access the first camera and display at the same time as the second camera. EX1008, 5:7-23, 4:32-5:6, 5:10-14, 5:31-35, 6:4-11, Figs. 2-5b; EX1004, ¶217.

Harma discloses that a single user may operate the mobile phone to capture images using camera 4 on the first side of the phone and camera 7 on the second side of the phone, and that those images can be simultaneously displayed on a display on the first side of the phone in the form of a “split screen.” EX1008, 5:10-14 (on the display “is seen a split-screen image composed of the images of the first and second camera”), 5:31-35 (describing a “control block” that “show[s] on the display 21 an image captured by the camera 12 or the camera 13 or both” or may “combine on the display 21 an image produced by the camera 12 or the camera 13 or both with an image received by radio by the radio receiver 25.”), Figs. 2, 3a, 4, 5a-5b; EX1004, ¶218. *Harma* illustrates how a user 8 may “access” both cameras to view a split screen of the images captured by the first and second cameras:

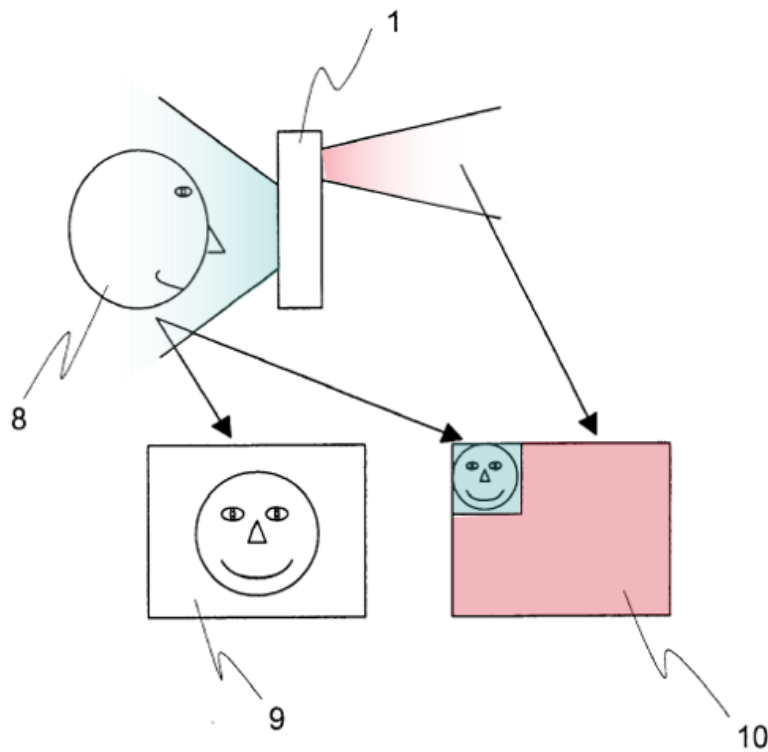


Fig. 3a

EX1008, Fig. 3a (annotated).

As seen above and further described by *Harma*, “[o]n the display,” there is an “image 9 of the user, or an **image 10**, where the **user’s image** is seen as a smaller picture in addition to the **image** captured by the other camera, i.e. on the display there is seen a split-screen image composed of the images of the first and second camera.” EX1008, 5:10-14, Cl.6 (“[T]he display (3) is arranged to show simultaneously the images of the first camera (4) and the second camera (7).”). As such, *Harma* discloses, at least under PO’s apparent interpretation, that the first and second cameras are “carried by the housing in an orientation to allow the at least one user to access the at least one first input device and first display device from the first

side of the housing at the same time as the at least one second input device from the second side of the housing.” EX1004, ¶¶219-220.

As discussed above, it would have been obvious to modify *Nagasawa* to include the first and second cameras described by *Harma* and to include *Harma*’s split-screen view in *Nagasawa*’s foldable telephone. *Supra* §VI.C.1; EX1004, ¶221. For example, the POSITA would have had ample reason to combine *Harma* with *Nagasawa* such that the first and second cameras of *Harma*’s mobile phone are oriented to permit the same perspective shots and split-screen views shown in Figure 3 of *Harma*. EX1004, ¶221. This would have been the natural result of the POSITA placing the cameras as discussed above with respect to 18[c] and 18[d] in *Nagasawa*’s foldable phone. EX1004, ¶221.

3. Claim 19

i. 19[a]

See 18[b]-18[e]. As it relates to Ground 4, a POSITA would have been aware of *Harma*’s teaching described in Ground 3. *See supra* §VI.B.2. The *Nagasawa-Harma* combination discloses these limitations. As shown in 18[b], the first side of first case body 1 and the second side of first case body 1 face mutually opposite directions. *See, e.g.*, EX1007, Figs. 11A-11C.

4. Claim 20

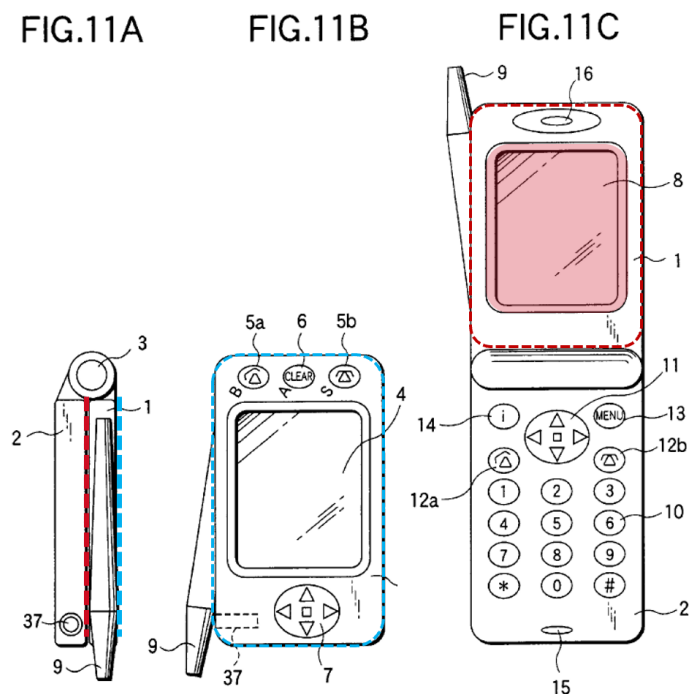
i. 20[a]

See 18[c]-18[e]. As it relates to Ground 4, a POSITA would have been aware of *Harma*'s teaching described in Ground 3. See *supra* §VI.B.3. As explained above, the Petition relies on cameras as meeting the claimed input devices of Claim 18.

5. Claim 21

i. 21[a]

The *Nagasawa-Harma* combination discloses this limitation. As shown in Figures 11A-11C, the foldable telephone of *Nagasawa* includes a second display residing on the **second side** of first case body 1. EX1007, Figs. 11A-C (below).



As explained by *Nagasawa*, “display 4 comprising a liquid crystal display is provided on the outer surface of the first case body” (**second side**) while the “display

8” is provided on “the inner surface of the first case body” (**first side**). EX1007, 3:53-55, 3:66-4:1.

VII. CONCLUSION

Petitioners respectfully request that *inter partes* review of the '168 Patent be instituted and that Claims 18-21 be cancelled as unpatentable under 35 U.S.C. §318(b).

Respectfully submitted,
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Date: November 7, 2024

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. §42.24(d), the undersigned certifies that the foregoing Petition, exclusive of the exempted portions as provided in 37 C.F.R. §42.24(a), contains no more than 13,969 words and therefore complies with the type-volume limitations of 37 C.F.R. §42.24(a). The word count was calculated by starting with Microsoft Word's total document word count and subtracting the words for the Table of Contents, the Exhibit List, the Mandatory Notices, the Certificate of Compliance, and the Certificate of Service.

Respectfully submitted,
BAKER BOTTS L.L.P.

/Eliot D. Williams/
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Lead Attorney for Petitioners

Date: November 7, 2024

CERTIFICATE OF SERVICE

In accordance with 37 C.F.R. §§42.6(e) and 42.105, the undersigned certifies that on the November 7, 2024, a complete and entire copy of this **Petition for *Inter Partes* Review OF U.S. PATENT NO. 10,499,168** and all supporting exhibits were provided via Federal Express, postage prepaid, to the Patent Owner and its known representatives by serving the correspondence address of record for the '168 Patent holder and the patent holder's counsel:

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Date: November 7, 2024