

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

**DECLARATION OF SANDEEP CHATTERJEE, PH.D.
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,499,168**

TABLE OF CONTENTS

I.	INTRODUCTION	4
II.	EXPERIENCE AND QUALIFICATIONS.....	4
III.	TASK SUMMARY AND MATERIALS REVIEWED.....	9
IV.	LIST OF EXHIBITS	10
V.	SUMMARY CONCLUSIONS AND GROUNDS FOR CHALLENGE	12
VI.	LEGAL STANDARDS.....	12
A.	Level of Ordinary Skill in the Art	12
B.	Legal Standard for Claim Construction	13
C.	Anticipation.....	15
D.	Obviousness.....	15
E.	Priority Date	18
VII.	OVERVIEW OF THE CHALLENGED PATENT.....	20
A.	Brief Summary of the '168 Patent	21
B.	The Challenged Claims of the '168 Patent.....	23
C.	Relevant Prosecution History of the '168 Patent	24
D.	Claim Construction	26
E.	Priority Date	26
VIII.	LEVEL OF ORDINARY SKILL IN THE ART	28
IX.	TECHNOLOGY BACKGROUND.....	29
A.	Videoconferencing Technologies.....	30
1.	1990s: Polycom and the rise of video conferencing.....	30
2.	PCMCIA and Zoomed Video	33
B.	Devices With Multiple Screens and Cameras.....	34
C.	Convergence.....	41
X.	ASSERTED GROUNDS OF INVALIDITY	42
A.	Grounds 1 and 2: Claims 18-21 are (a) anticipated by, or (b) at least obvious over, <i>Okaya</i>.....	42
1.	Claim 18.....	42

2.	Claim 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.”	76
3.	Claim 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.”	77
4.	Claim 21: “The communication services device as claimed in claim 19 includes, a second display device residing on the second side of the housing.”	78
B.	Ground 3: Claims 18-20 are obvious over <i>Harma</i>	79
1.	Claim 18.....	79
2.	Claim 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.”	93
3.	Claim 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.”	94
C.	Ground 4: Claims 18-21 are rendered obvious over <i>Nagasawa</i> in view of <i>Harma</i>	94
1.	Motivation to Combine	94
2.	Claim 18.....	109
3.	Claim 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.”	133
4.	Claim 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.”	134
5.	Claim 21: “The communication services device as claimed in claim 19 includes, a second display device residing on the second side of the housing.”	134
XI.	SECONDARY CONSIDERATIONS	135
XII.	CONCLUSION	135
XIII.	DECLARATION	135

I, Sandeep Chatterjee, Ph.D., hereby declare as follows:

I. INTRODUCTION

1. My name is Sandeep Chatterjee, I make this declaration based upon my own personal knowledge and, if called upon to testify, would testify competently to the matters contained herein.

2. I have been asked to provide technical analysis in the *inter partes* review of U.S. Patent No. 10,499,168, which I may abbreviate as “the ’168 Patent” or refer to as the “Challenged Patent.” This declaration is a statement of my opinions on issues related to the unpatentability of certain claims of the ’168 Patent.

II. EXPERIENCE AND QUALIFICATIONS

3. In formulating my opinions, I have relied upon my knowledge, training, and experience in the relevant art. My qualifications are stated more fully in my curriculum vitae, which has been provided as EX1005. My CV also lists publications on which I am a named author and identifies parties on behalf of whom I have previously provided expert testimony within the past four years. Here, I provide a summary of my qualifications.

4. I am the Chief Executive Officer of Experantis LLC (“Experantis”), a technology consulting company. Previously, I was the Co-founder, Executive Vice President and Chief Technology Officer of SourceTrace Systems, Inc., a technology

and services company enabling the delivery of secure remote electronic services over landline and wireless telecommunications networks.

5. I received my Bachelor's degree in Electrical Engineering and Computer Science from the University of California, Berkeley in 1995. I received my Master's degree in Computer Science from the Massachusetts Institute of Technology (MIT) in 1997, and my Doctorate in Computer Science from MIT in 2001. I received a certificate of completion for an executive education program on global leadership from Harvard University in 2011.

6. My doctoral dissertation at MIT, entitled "Composable System Resources for Networked Systems," involving networked and distributed computer systems and architectures, was selected as one of the top inventions in the history of MIT's Laboratory for Computer Science. This invention is showcased in a time capsule at the Museum of Science in Boston, Massachusetts. Other recipients of this honor include Bill Gates, the founder of Microsoft, and Tim Berners-Lee, the inventor of the World Wide Web.

7. As part of applications of my doctoral research, I developed hardware and software systems for intelligent environments within homes and offices. Some of these devices included televisions, digital picture frames, refrigerators and children's toys. The distributed computing system of these intelligent environments included distributed data storage and retrieval, including the coordinated

presentation of information on one or more displays. Some of these devices – for example, the digital picture frame – supported the use of cameras to take photographs and videos that could be stored and presented on screens. The hardware included standard PCMCIA (Personal Computer Memory Card International Association) CardBus peripherals that worked together with CardBus computing modules. This system architecture allowed plug-and-play updating of computing resources (e.g., peripherals, processors, memory, etc.) for any compatible consumer electronic device. This distributed system also supported near-real-time computation and communications that enabled coordinated activities between various electronic devices and audio/video-based communications.

8. In 2011, I was named a Young Global Leader. This honor, bestowed each year by the World Economic Forum, recognizes and acknowledges the top leaders—all below the age of 40—from around the world for their professional accomplishments, commitment to society, and potential to contribute to shaping the future of the world. In 2016, I was appointed to the World Economic Forum’s expert network as an expert in technology and innovation.

9. From 1997, I was the Entrepreneur-in-Residence at FidelityCAPITAL, the venture capital arm of Fidelity Investments. In 1999, I founded and served as President and Chief Technology Officer (CTO) of Satora Networks, which

developed tools and technologies for building appliances and services for the Internet using wireless and other technologies to extend it beyond the desktop.

10. In 2001, I joined Bluestone Software's Mobile Middleware Labs as a Senior Engineer developing applications and systems infrastructure for enterprise Java/J2EE, Web services, and enterprise mobile solutions. After the completion of Hewlett-Packard's (HP) acquisition of Bluestone, I became a Senior Member of the Technical Staff at HP's Middleware Division. I was responsible for architecting and developing the company's next-generation Web services platform for enterprise as well as mobile environments, known as the Web Services Mediator.

11. I was part of the Expert Group that developed the JSR-00172 J2ME (Java 2 Platform, Micro Edition) Web Services Specification, the worldwide industry standard for mobile Web services. I am the co-author, with James Webber, of the book "Developing Enterprise Web Services: An Architect's Guide" (published by Prentice-Hall in 2004). This book has been adopted by over 100 universities and colleges around the world, and has been translated or reprinted in a number of countries around the world.

12. I have significant experience in developing complex computing systems. For example, through a contract between HP and the United States Agency for International Development (USAID), I architected and led the development of one of the first mobile banking solutions. This system enabled customers to use their

mobile phones and other wireless handsets to connect with the core banking systems of banks and other financial institutions, and perform transactions without having to travel to bank branches. This system supported many banking transactions, including deposits, withdrawals, loan applications, loan disbursements and loan repayments.

13. Later, after SourceTrace Systems' acquisition of this technology, I led the expansion of this solution into multiple countries and into multiple industries. Banks and other financial services companies utilized this technology to make their tellers more efficient, to provide self-service ATMs within branches, and to provide remote access to banking services. Additionally, through our licensing agreement with Telefonica, one of the largest cellular and telecommunications companies in the world, this solution was deployed in various other industries, including logistics and asset management and customer relationship management. Bloomberg Television selected and featured this technology and the company I co-founded to commercialize this technology on Bloomberg TV's "Bloomberg Innovators" program.

14. I have been a retained expert witness for various disputes that involved significant technology issues, and I have been qualified as a technology expert by U.S. District and State Courts, including in California, Delaware, Florida and Texas in technology areas that are relevant to this case, including but not limited to: computer software systems, distributed computing systems, and mobile and wireless

systems. I have previously testified through declaration or expert report, at deposition, and at trial in numerous intellectual property and commercial litigation matters, including for patent litigation, copyright and trade secret misappropriation litigation, and contract dispute cases. I have submitted more than one hundred and fifty expert declarations and expert reports, testified at deposition more than eighty times, and testified at trial or at hearings at least twelve times. I have been identified as one of the top 1000 patent professionals in the world, and I am listed in the IAM Patent 1000, which identifies the world's leading patent litigation and prosecution attorneys, as well as damages and technology expert witnesses.

15. Experantis is being compensated for my time on this matter at my standard hourly rate and reimbursed for any expenses that I incur related to my work in this matter. Neither Experantis nor I have any financial interest in the outcome of this matter, and Experantis will be paid for my time regardless of the outcome of this matter.

III. TASK SUMMARY AND MATERIALS REVIEWED

16. I have been asked to review the Challenged Patent and its prosecution history, to provide an understanding of the technology relevant to the Challenged Patent, to review certain prior-art references, and to analyze whether those references disclose or teach limitations of claims from the Challenged Patent. The

opinions stated in this declaration are from the perspective of a person of ordinary skill in the art (POSITA).

IV. LIST OF EXHIBITS

17. In forming my opinions, I have reviewed the Challenged Patent, its prosecution history and references cited by the Examiner, the materials cited in the List of Exhibits, and the materials cited throughout my declaration.

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,” (“Okaya”) filed January 21, 1997 and issued September 15, 1998.
EX1007	U.S. Patent No. 6,782,281 to Naokazu Nagasawa, “Folding Portable Telephone Apparatus,” (“Nagasawa”) filed November 3, 2000.
EX1008	PCT Intl. Patent Pub. No. WO 01/31893 to Esa Harma, “Mobile Phone,” (“Harma”) filed Oct. 25, 2000, 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.

DECLARATION OF SANDEEP CHATTERJEE
IN SUPPORT OF PETITION FOR INTER PARTES REVIEW
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. Merriam-Webster Online Dictionary (2024).
EX1015	“Mobile telephone” definition. <i>Telephony’s Dictionary</i> (2 nd Ed. 1986).
EX1016	“Mobile phone” definition. <i>The Focal Illustrated Dictionary of 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	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 TM Latitude TM 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>Tech. 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 .

18. All citations to exhibits reference original page numbers found in the underlying document, and all emphases are added unless otherwise noted.

V. SUMMARY CONCLUSIONS AND GROUNDS FOR CHALLENGE

19. After reviewing the materials identified in the List of Exhibits, I have concluded that each of the Challenged Claims of the '168 Patent would have been obvious to a person of ordinary skill in the art, based on the following grounds:

Ground	'168 Claims	Summary
1	18-21	Anticipated by <i>Okaya</i>
2	18-21	Obvious over <i>Okaya</i>
3	18-20	Anticipated by <i>Harma</i>
4	18-21	Obvious over <i>Nagasawa</i> in view of <i>Harma</i>

VI. LEGAL STANDARDS

A. Level of Ordinary Skill in the Art

20. When interpreting a patent, I understand that it is important to identify the relevant art pertaining to the patent-in-suit as well as the level of ordinary skill in that art at the time of the claimed invention. The “art” is the field of technology to which the patent is related.

21. I have been instructed by counsel that the person of ordinary skill in the art is a hypothetical person who is presumed to know the relevant prior art. I understand that the actual inventor’s skill is not determinative of the level of ordinary skill. I further understand that the factors that may be considered in determining the level of skill include: the types of problems encountered in the art; prior art solutions

to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field. I understand that not all such factors may be present in every case, and one or more of them may predominate.

B. Legal Standard for Claim Construction

22. I understand that the first step in determining whether a patent claim would have been anticipated or obvious is to ascertain how a POSITA would have understood the claim terms.

23. I have been instructed by counsel on the law regarding claim construction and patent claims, and I understand that a patent may include two types of claims: independent claims and dependent claims. An independent claim stands alone and includes only the limitations it recites. A dependent claim can depend from an independent claim, or it can further depend from another dependent claim. I understand that a dependent claim includes all the limitations that it recites, in addition to all the limitations recited in the claim(s) from which it depends.

24. It is my understanding that in proceedings before the USPTO, the claims of a patent are to be construed under what is referred to as the “Phillips standard.” I understand that this means that claim terms of a patent are given the meaning the terms would have to a POSITA, in view of the description provided in the patent itself and the patent’s file history.

25. I understand that to determine how a person of ordinary skill would have understood a claim term, one should look to those sources available that show what a person of skill in the art would have understood the disputed claim language to mean. I understand that, in construing a claim term, one looks primarily to the intrinsic patent evidence, including the words of the claims themselves, the remainder of the patent, and the patent's prosecution history. I understand that extrinsic evidence, which is evidence external to the patent and the prosecution history, may also be useful in interpreting patent claims when the intrinsic evidence itself is insufficient.

26. I understand that words or terms should be given their ordinary and accepted meaning unless it appears that the inventors were using them to mean something else. In making this determination, the claims, the remainder of the patent, and the prosecution history are of paramount importance. Additionally, the patent and its prosecution history must be consulted to confirm whether the patentee has acted as its own lexicographer (*i.e.*, provided its own special meaning to any disputed terms), or intentionally disclaimed, disavowed, or surrendered any claim scope.

27. In comparing the claims of the Challenged Patent to the prior art, I have considered the Challenged Patent and its file history considering the understanding of a person of skill at the time of the alleged invention.

C. Anticipation

28. It is my understanding that the claims of a patent are anticipated by a prior art reference if each and every element of the claim is found either explicitly or inherently in a single prior art reference or system. I understand that inherency requires a showing that the missing descriptive matter in the claim is necessarily or implicitly present in the allegedly anticipating reference, and that it would have been so recognized by a POSITA. In addition, I understand that an enabling disclosure is a disclosure that allows a POSITA to make the invention without undue experimentation. Although anticipation typically involves the analysis of a single prior art reference, I understand that additional references may be used to show that the primary reference has enabling disclosure, to explain the meaning of a term used in the primary reference, and/or to show that a characteristic is inherent in the primary reference.

D. Obviousness

29. I understand that the prior art may render a patent claim “obvious.” I understand that two or more prior art references (*e.g.*, prior art articles, patents, or publications) that each disclose fewer than all elements of a patent claim may nevertheless be combined to render a patent claim obvious if the combination of the prior art collectively discloses all elements of the claim and one of ordinary skill in the art at the time would have been motivated or had sufficient rationale to combine

the prior art in such a way. I understand that this rationale or motivation to combine need not be explicit in any of the prior art but may be inferred from the knowledge of one of ordinary skill in the art at the time the patent was filed. I also understand that one of ordinary skill in the art is not an automaton but is a person having ordinary creativity. I further understand that one or more prior art references, articles, patents, or publications that disclose fewer than all the elements of a patent claim may render a patent claim obvious if including the missing element would have been obvious to one of skill in the art (*e.g.*, the missing element represents only an insubstantial difference over the prior art or a reconfiguration of a known system).

30. I understand that under the doctrine of obviousness, a claim may be invalid if the differences between the invention and the prior art are such that the subject matter would have been obvious at the time the invention was made to a POSITA to which the subject matter pertains.

31. To assess obviousness, I understand that I am to consider the scope and content of the prior art, the differences between the prior art and the claim, the level of ordinary skill in the art, and any secondary considerations to the extent they exist.

32. I understand that any evidence of secondary indicia of non-obviousness should be considered when evaluating whether a claimed invention would have been obvious to one of ordinary skill at the time of invention. These secondary indicia of non-obviousness may include, for example:

- a long felt but unmet need in the prior art that was satisfied by the claimed invention;
- commercial success of processes claimed by the patent;
- unexpected results achieved by the invention;
- praise of the invention by others skilled in the art;
- the taking of licenses under the patent by others; and
- deliberate copying of the invention.

33. I understand that there must be a nexus between any such secondary indicia and the claimed invention.

34. It is also my understanding that there are additional considerations that may be used as further guidance as to when the above factors will result in a finding that a claim is obvious, including the following:

- the claimed subject matter is simply a combination of prior art elements according to known methods to yield predictable results;
- the claimed subject matter is a simple substitution of one known element for another to obtain predictable results;
- the claimed subject matter uses known techniques to improve similar devices or methods in the same way;
- the claimed subject matter applies a known technique to a known device or method that is ready for improvement to yield predictable results;
- the claimed subject matter would have been “obvious to try” choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;

- there is known work in one field of endeavor that may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to a POSITA;
- there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent's claims; and
- there is some teaching, suggestion, or motivation in the prior art that would have led a POSITA to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed subject matter.

35. Finally, I understand that a claim may be deemed invalid for obviousness in light of a single prior art reference, without the need to combine references, if the elements of the claim that are not found in the reference can be supplied by the knowledge or common sense of one of ordinary skill in the relevant art.

E. Priority Date

36. I understand that, subject to the next paragraph, the asserted "priority date" of a patent is the earlier of: (a) the date on which a patent application is filed; or (b) the date on which an earlier-filed patent application is filed if the patentee properly claims the benefit of priority to that earlier-filed patent application.

37. I understand that it is not enough for a patent to merely claim the benefit of an earlier-filed application, but that additional criteria must be met. In particular, the prior application itself must describe the claimed invention, and must do so in sufficient detail that one skilled in the art can clearly conclude that the inventor

invented the claimed invention as of the filing date sought. First, I understand that a priority-date analysis is on a claim-by-claim basis. Second, I understand that, in order for a patent claim to be entitled to the filing date of an earlier patent application, a “Section 112 analysis” must be conducted. I am informed that a “Section 112” analysis encompasses looking to the earlier patent application and ascertaining whether that earlier patent application meets both the written-description and enablement requirements as of the filing date of the earlier application. I understand that it is not enough that the claim would have been obvious from the earlier application, but that application itself must describe the claimed invention.

38. I understand that in order to satisfy the written description requirement the earlier application must reasonably convey to those skilled in the art that the inventors had possession of the subject matter of the patent as of the filing date of the earlier application. I have been informed that it is the disclosures of the earlier patent application that count, and that while the meaning of terms, phrases, or diagrams in the earlier patent application must be interpreted from the vantage point of one skilled in the art, all the claimed limitations must appear in the specification. Further, I understand that this analysis is not a question of whether one skilled in the art might be able to construct the claimed invention from the teachings of the disclosure. The question is not whether a claimed invention is an obvious variant of

that which is disclosed in the specification; rather, I understand that an earlier application must itself describe each of the claim limitations.

39. I also understand that in order to satisfy the enablement requirement, the earlier application must enable a person of ordinary skill in the art to practice the claimed invention without undue experimentation.

VII. OVERVIEW OF THE CHALLENGED PATENT

40. I have reviewed U.S. Patent No. 10,499,168 (“the ’168 Patent”), which is entitled “System, Method, and Apparatus for Providing Interpretive Communication on a Network.”¹ I understand that the application which led to the ’168 Patent (Appl. No. 12/658,496, the “’496 application”) was filed on February 08, 2010, and that the ’168 Patent issued on December 03, 2019.² I understand that the ’168 Patent claims priority to Application No. 10/057,131 (the “parent application”) filed on October 25, 2001 (issued as U.S. Patent No. 7,792,676, the “’676 Patent”). I understand that Petitioners, for purposes of the Petition, assume the October 25, 2001 filing date of the parent application as the priority date of the ’168 Patent.

¹ EX1001, Title.

² EX1001, Cover.

A. Brief Summary of the '168 Patent

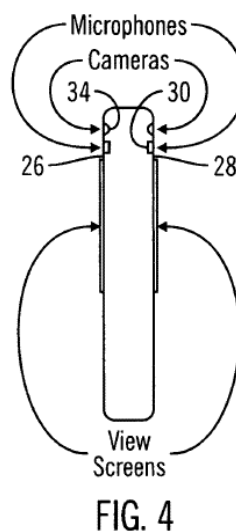
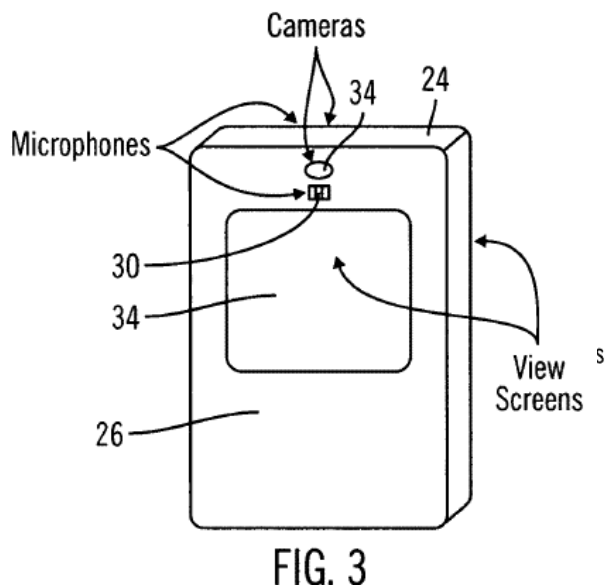
41. The '168 Patent describes systems for providing “real-time or near real-time interpreting services for utilization on a network.” EX1001, at 1:16-18. The '168 Patent recognizes the inefficiency in waiting for a live interpreter such as “in a hospital” where “it may take two hours or more to locate and transport a translator or interpreter to the medical facility.” *Id.* at 2:30-33. “Although live interpreting is advantageous, it fails to resolve the basic problems presented herein, namely, providing an interpreter in a timely and cost-efficient manner.” *Id.* at 2:20-24. Accordingly, the '168 Patent recognizes a need “in the industry [that] exists for a system, method and apparatus that provides an ability to locate and utilize an interpreter and/or translator quickly” and “that provides for utilization of these interpretive and/or translative providers via a network, for example the World Wide Web.” *Id.* at 3:21-31.

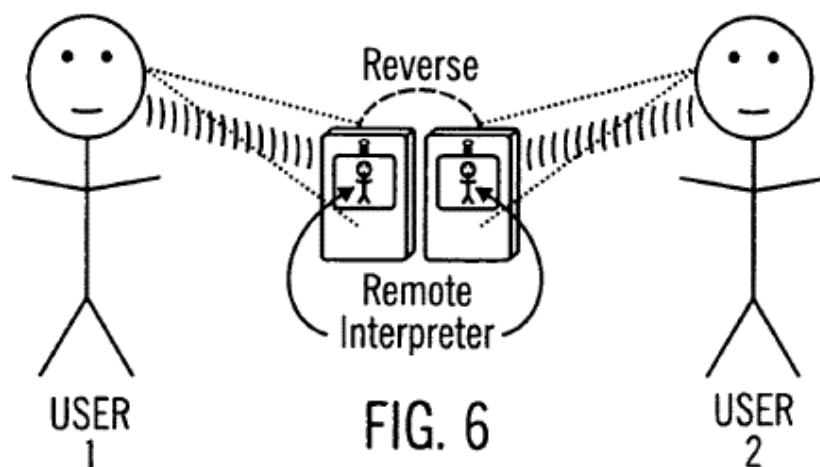
42. Although embodiments of the alleged invention may be performed using a single computer over a network to access such interpreting services, the Challenged Claims relate to disclosed embodiments in which “a plurality of user computers can be contained within **a single housing** system.” EX1001, at 19:17-19.³ Such embodiments envision that “a user, such as a doctor, could stand across

³ All emphasis added unless stated otherwise.

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.* at 19:30-34. “In this embodiment, the interpreter is transmitted simultaneously to both the doctor and the hearing impaired such that interpretation services are provided.” *Id.* at 19:34-37.

43. Figures 3-6 of the '168 Patent illustrate embodiments of the claimed “single housing” arrangement, of which Figures 3, 4, and 6 are reproduced below:





As can be seen above, the illustrated “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, at 19:17-45.

B. The Challenged Claims of the '168 Patent

44. The Challenged Claims of the '168 Patent, which are Claims 18-21, are set forth below. Some of the claim elements have been further sub-divided for ease of reference.

Claim #	Claim Element
18[p]	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]	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]	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]	The communication services device as claimed in claim 19 includes, a second display device residing on the second side of the housing .

45. A Claim Listing is included as EX1011.

C. Relevant Prosecution History of the '168 Patent

46. I have reviewed the prosecution history of the '168 Patent. Application No. 12/658,496 (the "'496 Application") was filed on February 8, 2010 with 21 claims (Claim 1 – Claim 21).

47. The '168 Patent is a divisional of an application filed on October 25, 2001. The divisional application was filed on February 8, 2010, and underwent a lengthy prosecution history including multiple appeal briefs to the Board. The '168

Patent did not issue until December 3, 2019. The prosecution history involved repeated attempts by the applicant to overcome the same primary reference in combination with one or more secondary references. The Examiner's combination to reject Challenged Claim 18 (which during prosecution, before renumbering, was referred to as Claim 21), which was ultimately overcome by a Board decision for Applicant, was based on a system that disclosed a network-based translation system ("*Bennett*") combined with a dual-sided panel display device ("*Arai*"). EX1003, at 619-621, 832-837. The Board reversed the Examiner's rejection because the combination did not disclose the elements that would allow the user to input visual information through the claimed first and second input devices. *Id.* at 832-837.

48. Unlike the Examiner's combination, the prior art discussed herein clearly discloses the required visual input devices along with the other required elements of Challenged Claims 18-21. For example, the *Okaya* reference expressly discloses a single, four-sided housing that includes a display and a camera on each side of the housing. EX1006, Fig 1; *see infra* § X.A.1.d-e. As another example, the *Harma* reference discloses a single mobile telephone that includes a display on one side and cameras on both sides of the device (Claims 18-20). EX1008, at Figs. 5a, 5b; *see infra* § X.B.1.d-e. The combination of *Harma* and *Nagasawa*, which discloses a mobile telephone with displays on both sides (EX1008, Figs. 5a, 5b), renders obvious a single housing with displays and cameras on both sides (Claim

21). *See infra* § X.C.1; see, e.g., EX1007, 3:66-4:16, Figs. 11A, 11C. The Examiner did not consider these references during prosecution.

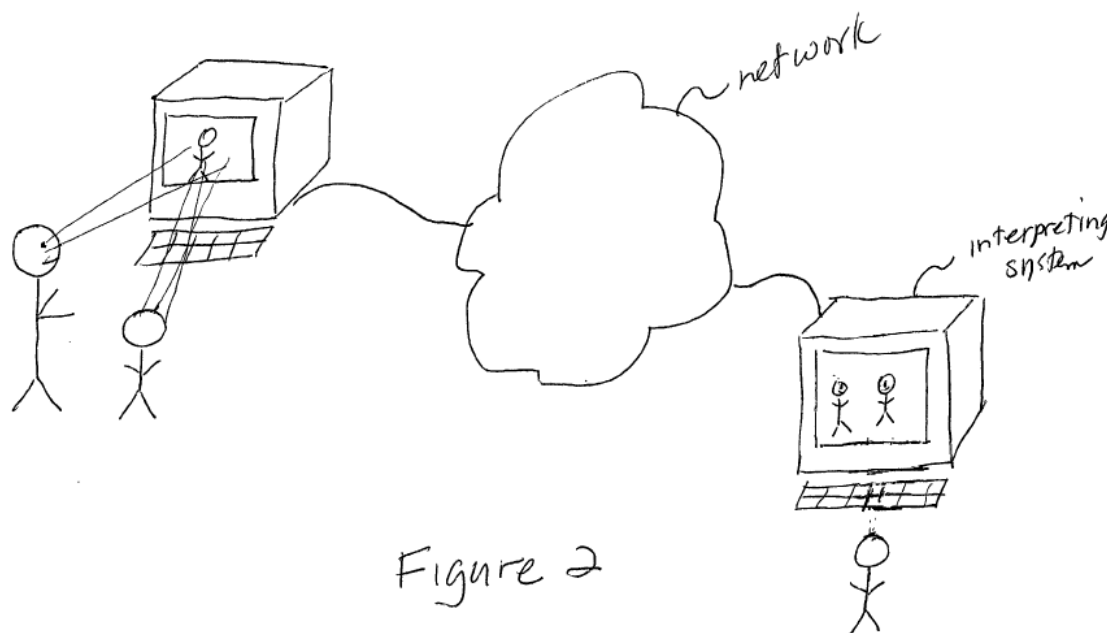
D. Claim Construction

49. Except as otherwise noted, I have applied a plain and ordinary meaning in my analysis of the claims. I reserve the right to offer additional opinions on claim construction in response to arguments that may be made by Patent Owner.

E. Priority Date

50. The '168 Patent claims priority to Provisional Application No. 60/243,162, which was filed on October 25, 2000. In my opinion, Claims 18-21 of the '168 Patent are not entitled to the provisional filing date of October 25, 2000.

51. The invention disclosed and claimed in Claims 18-21 is not disclosed in the earlier provisional application. The provisional application describes an interpretation-services system relying on conventional client-server devices. *See* EX1002. For example, Figure 2 of the provisional application illustrates the provision of interpretation services via two conventional computers, neither of which contains the features of Claims 18-21:



EX1002, Fig. 2.

52. The provisional application contains no description of devices having the characteristics of Claims 18-21, including displays and input devices on different sides of the same device, 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.

53. Accordingly, it is my opinion that the priority date of the '168 Patent is no earlier than October 25, 2001 (the “Relevant Date”).

VIII. LEVEL OF ORDINARY SKILL IN THE ART

54. I understand that the claims and specification of a patent must be read and construed through the eyes of a person of ordinary skill in the art (“POSITA”) at the time of the priority date of the claims.

55. I have also been advised that to determine the appropriate level of a person having ordinary skill in the art, the following factors may be considered: (a) the types of problems encountered by those working in the field and prior art solutions thereto; (b) the sophistication of the technology in question, and the rapidity with which innovations occur in the field; (c) the educational level of active workers in the field; and (d) the educational level of the inventors.

56. It is my opinion that, as of the earliest claimed priority date, a person of ordinary skill in the art 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.

57. Based on my educational and employment background, I am qualified to provide opinions concerning what a POSITA would have known and understood by October 25, 2001. Indeed, as reflected in my qualifications above, I am more than

qualified as a person of ordinary skill in the art as of the Relevant Date of the '168 Patent.

IX. TECHNOLOGY BACKGROUND

58. In the subsections below, I describe some of the basic aspects of the technology field of the alleged invention of the Challenged Patent that were well-known as of filing. Those of ordinary skill (as defined above) would have had knowledge of at least these technology concepts and systems.

59. The convergence of various multimedia technologies into mobile telephony and computing devices has a long history and was a strong market force motivating POSITAs in the industry in the 1990s. The industry has long focused on the concepts of integrating media devices, including the concepts of combining mobile telephones, graphic displays, and cameras. The industry has also long focused on improvements to video conferencing technology, allowing face-to-face conferencing at vast distances. Well before the relevant time the efforts were well underway to combine such devices into a single “converged” telephony device. The following section describes the history of these efforts, which would have been well known to the POSITAs at the relevant time.

A. Videoconferencing Technologies

60. Although initial videoconferencing technologies stretch back to the 1980s (and earlier), videoconferencing became commercially viable, both for business and personal use, in the 1990s.

1. 1990s: Polycom and the rise of video conferencing

61. Polycom was founded in 1990 by two colleagues from PictureTel, an early pioneer of videoconferencing. SoundStation was Polycom's first product, released in 1992. It was a triangular speakerphone with high-quality audio that enabled both parties to simultaneously speak and be heard. Polycom's first video product, ShowStation, shipped in 1994. Throughout the 1990s, Polycom provided conferencing products, including video conferencing, for corporate, education, and telemedicine markets.

62. Video conferencing over PCs became popular by the mid-1990s, both for business and personal use. EX1017, pp.135-36. In fact, a paper presented at the Annual Conference on Language and Communication for World Business and the Professions and published in April 1995 stated that: "[d]esktop computer-based video conferencing, with high fidelity sound, and group software support, is emerging as a major communications option." EX1018, p.1. It further stated that the following "critical factors [] are propelling the computer-based video conferencing revolution: (1) widespread availability of desktop computers interconnected on local

area networks, (2) new domestic and international digital communications options and support, (3) integrated groupware and communications protocols for visual and audio communications, and (4) managements readiness to accept video conferencing as a way of increasing staff productivity.” EX1018, p.1.

63. By the late 1990s, videoconferencing via videoconferencing systems was common for business use, as was personal or business videoconferencing on desktop or notebook PCs. EX1017, p.133-37. PC-based videoconferencing allowed for the use of multiple peripherals—including multiple cameras—with minimal setup. EX1017, p.146-50. And software for setting up and managing video calls was commonly available to a mass market. *See generally* EX1017. Users could perform video calls over a variety of available networks—including phone networks, cable networks, the ISDN, the Internet, LANs, Ethernet, and satellite broadcast—and video conferencing standards provided for device interoperability. EX1017, p.140-44. Video calling technology was expected to continue trending toward digital video, with the PC and TV merging together. EX1017, p.144.

64. The Microsoft NetMeeting Book (describing a video calling software available in the mid-90s) describes and illustrates the use of PCs for networked communication, as shown below:

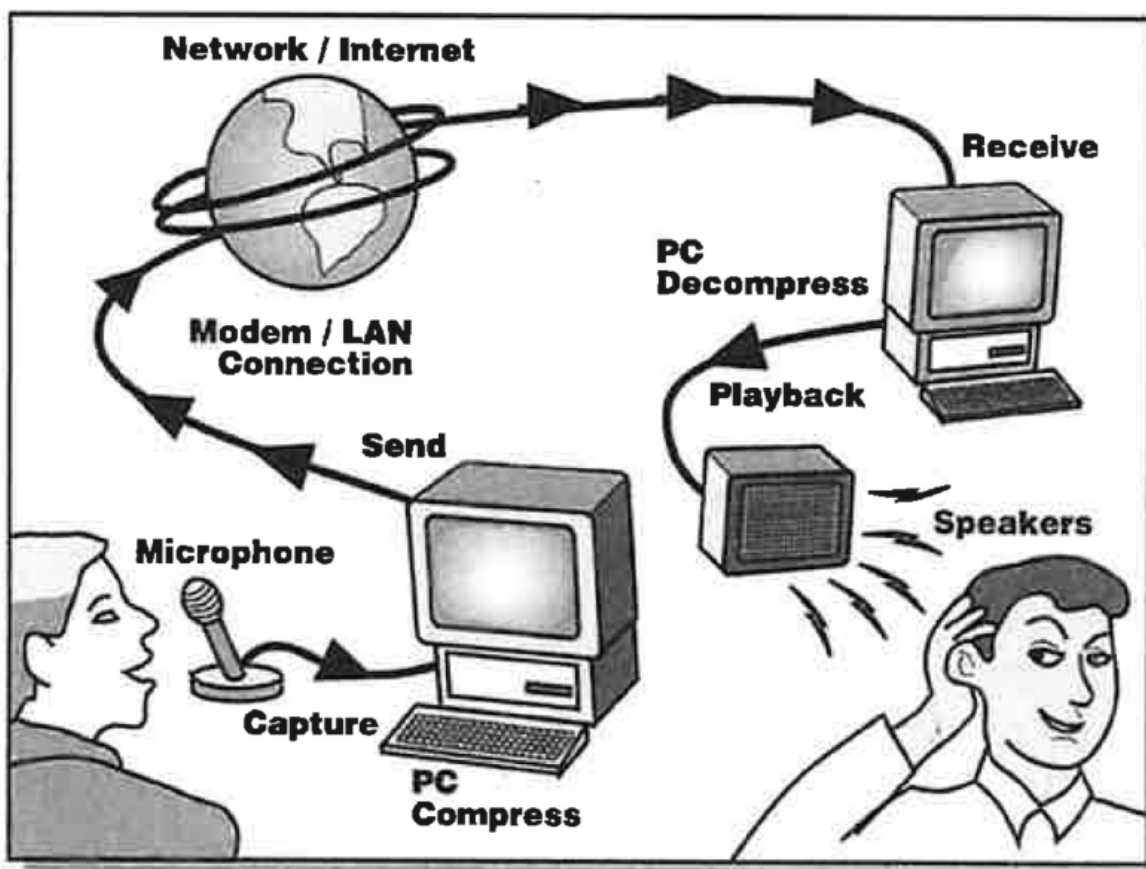


Figure 6-1. *Sending audio from one computer to another on a network.*

EX1017, p.116.

65. Although Figure 6-1 pictured above illustrates networking for audio communications, the Microsoft NetMeeting Book makes clear that networked PCs provided video conferencing in much the same fashion (albeit using greater bandwidth). See EX1017, p.140-43. In a video conference, a video data stream would accompany the audio data stream pictured above and audio/video streams would flow in both directions between the users depicted above. *Id.*

2. PCMCIA and Zoomed Video

66. The Zoom Video (ZV) industry standard further demonstrated the importance of videoconferencing, including video and audio, in the 1990s. The ZV standard was an extension to the PCMCIA standard. EX1021; EX1022. PCMCIA was established in June 1989 to establish a standard for making and marketing credit card-sized memory modules. One year later, the PCMCIA specification Release 1.0 was adopted. EX1021. In September 1991, the specification was revised to include standards for I/O cards – modems, LAN cards, mass storage, and other peripherals. This became Release 2.0. *Id.* The ZV cards could be connected to a PCMCIA socket that was ZV compliant. EX1021; EX1022. The ZV allowed a system to transfer video and audio data through a ZV card (also known as a Zoom card) directly to the VGA controller, thereby bypassing the system bus and CPU. EX1022. This significantly improves the speed of processing video and audio data.

67. In September 1991, the PCMCIA specification included standards for I/O cards, including modems and LAN cards. By 1999, the credit card sized PCMCIA adaptors were widely used in laptop and notebook computers for modem/faxes, networking, video conferencing, and other functions. EX1020; EX1021; EX1022.

B. Devices With Multiple Screens and Cameras

68. Well before the Relevant Date, POSITAs were well aware of techniques for combining multiple displays and cameras into a single device. Devices, including mobile devices, with multiple screens were well known prior to the Relevant Date. For example, launched in 1996,⁴ the Nokia 9000 Communicator rolled all of the features of a computer into a phone, putting email, web browsing, fax, word processing and spreadsheets into a single pocketable device.⁵ The Communicator was a mobile powerhouse, with 8MB of memory and a 33MHz processor. This combination ran Nokia's own GEOS operating system (a predecessor to the Symbian OS used on later models), combined with a suite of business programs that could read and edit Microsoft Office files from a desktop PC. Inside the clamshell style case was a chiclet QWERTY keyboard, complete with

⁴ The US model was launched in 1997 (the Nokia 9000i Communicator), running on the GSM 1900 frequency offered by carriers like Microcell in Canada.

⁵ Richard Baguly, "The Gadget We Miss: The Nokia 9000 Communicator," *Medium* (August 1, 2013), available at <https://medium.com/people-gadgets/the-gadget-we-miss-the-nokia-9000-communicator-ef8e8c7047ae>; see also "Nokia 9000 Communicator," *Mobile Phone Museum*, available at <https://www.mobilephonemuseum.com/phone-detail/nokia-9000-communicator>.

function keys for the major features and a series of programmable buttons by the screen. This screen was a black and white LCD, with a then-high resolution of 640 x 200 pixels. This long, thin screen meant that it could offer a first: a graphical web browser on a mobile device. *Id.*

69. As shown in the photos below, the Communicator had two screens. One on the outside and a larger screen on the inside of the clamshell. The inside also included a full QWERTY keyboard. *Id.*





70. Previous phones had offered only text web browsing, but the 9000 Communicator could render graphics and connect to the Internet over the built-in 9600 bits per second GSM modem, which worked with the digital GSM phone networks that were being rolled out across the world. *Id.*

71. As Nokia explained it (and shown above in the photos), the Communicator had two “interfaces.” Nokia used the term “interfaces” to stress the point that these two functions were being provided by the same underlying hardware and that this device was not simply two devices enclosed within the same case. For

example, the address book on the phone interface was the same as the contacts within the Communicator interface.⁶

72. The Nokia 9110 Communicator was introduced at the German technology trade fair, CeBIT '98. It was Nokia's second-generation Communicator, coming two years after the original Nokia 9000 Communicator. There was a clear focus on business users with Anssi Vanjoki, Senior Vice President, Nokia Mobile Phones describing it as "a truly outstanding, complete communications tool with a wide range of applications optimized for use in corporate and vertical markets, such as field sales, transportation, security and fleet management increasing productivity and reducing costs by giving easy yet efficient access to required information while on the move, in the office or at home."⁷

73. The device could also be connected to a Windows PC (running Windows 95 or Windows NT 4.0) via the "PC Suite for Nokia 9110 Communicator" software. This allowed users to "transfer information and software between the communicator and a computer." *Id.*

⁶ "Nokia 9000 Communicator," *Mobile Phone Museum*, available at <https://www.mobilephonemuseum.com/phone-detail/nokia-9000-communicator>.

⁷ "Nokia 9110 Communicator," *Mobile Phone Museum*, available at <https://www.mobilephonemuseum.com/phone-detail/nokia-9110-communicator>.

74. Nokia explained the value of data connectivity on the move describing how wireless services had “evolved beyond voice” and was playing an increasingly important role “not only in business use but also personal lifestyle uses with the emergence of electronic banking and commerce, electronic postcards and infotainment.” *Id.*

75. The 9110 Communicator also provided mobile photography. Nokia claimed it was the first phone to be able to support “wireless image sending and receiving” using an application called “Digital Camera Connectivity”. Users were able to receive pictures via an infrared connection from a digital camera which supported the Ir-TranP protocol. Photographs could then be sent “over the air for further processing” and could also be attached to an email or sent via fax. Nokia showcased this capability with the Concord Eye camera (see picture below). *Id.*



76. Around the same time, there was a growing interest in the use of integrating cameras into the same housing as the mobile phone, as taught for example in *Harma*. E.g., EX1008. Similarly, integrating gaming into phones was a desirable feature, as taught in *Nagasawa*. See, e.g., EX1007; EX1010.

77. As another example, in 1998, Nintendo released the Nintendo Game Boy Camera. The Game Boy Camera offered Game Boy owners a new, fun way to interact with their handheld gaming machine. The camera is built into a Game Boy cartridge, and the fixed-lens camera can rotate 180 degrees, allowing for selfies, long before “selfies” were commonplace. The camera may not capture good images with its 0.014MP CMOS image sensor that records 2-bit images – meaning it displayed

four shades of gray – but it was reasonably priced and made digital photography affordable. The camera also worked with a Game Boy Printer, sold separately, letting you make small stamp-sized thermal prints of your photos. You could also add fun effects and frames to your photos.⁸

78. The images are only 128 x 112 pixels. The Game Boy camera thus combined the ability to capture digital images and playing with Game Boy Camera-powered minigames with the conventional games available for the system. *Id.*

79. A Game Boy Camera plugged into a Game Boy is shown below.

⁸ “Retro Review: 24 years after its release, is the iconic Nintendo Game Boy Camera still fun?,” *Digital Photography Review* (May 6, 2022), available at <https://www.dpreview.com/news/8396538445/retro-review-24-years-after-its-release-is-the-iconic-nintendo-game-boy-camera-still-fun>.



C. Convergence

80. In light of the trends described above, “convergence” of communications technologies into multifunctional devices was a hot topic in the mid- to late 1990s. *See, e.g.*, EX1023, EX1024. Engineers and technologists were exploring a vast array of new markets and applications enabled by the Internet, the PC, and other communications technologies, such as wireless networks. EX1024, p.1 (describing opportunities for new products and services). And development of multifunctional electronic devices, including mobile devices providing for

multimedia communications, was at the center of the movement toward convergence. EX1023, pp.5-6 (explaining that networked computers “under the banner of multimedia” provide “complete flexibility in the medium of communication, including text, images, video, audio, or mixtures thereof,” as well as “video conferencing”); EX1024, p.1 (explaining that “streaming media, games, and internet browsing through wireless smart phones” are “essential ingredients” in mobile phone development).

81. Accordingly, by the late 1990s, the telecommunications and electronic device industry was focused on providing multifunctional technologies that allow users to communicate in multiple ways, including multimedia communications, through a single device. As I will explain in detail in Section X.C, *infra*, these trends would have provided ample motivation for the POSITA to combine the multimedia capabilities of various telephony devices into one “converged” multimedia device.

X. ASSERTED GROUNDS OF INVALIDITY

A. Grounds 1 and 2: Claims 18-21 are (a) anticipated by, or (b) at least obvious over, *Okaya*.

1. Claim 18

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

82. I understand that preambles are not presumed to be limiting. To the extent the preamble is limiting here, it is my opinion that *Okaya* discloses a

multimedia carousel (which maps to the claimed “communication service device”) for use in video conferencing (i.e., a “communication service”) over a telephone network (“communication network”). EX1006, 2:6-13, 2:48-67, 3:1-4, 3:32-59.

83. Figure 1 is reproduced below:

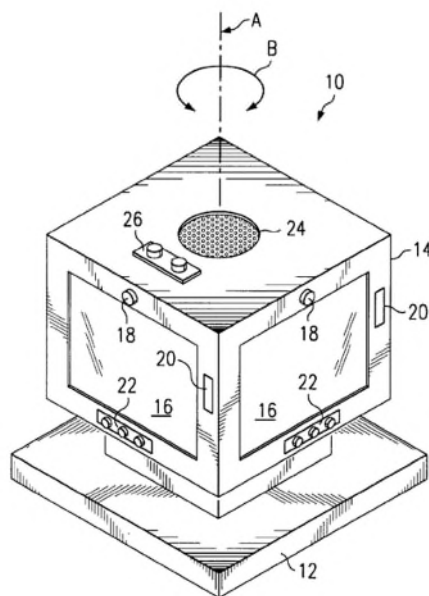


Fig. 1

EX1006, 2:48-50 (“FIG. 1 is a perspective view of one embodiment of a multimedia carousel 10.”).

84. As shown above, *Okaya* discloses:

a multimedia carousel **for use in video conferencing** and multimedia presentation applications. In a preferred embodiment, the multimedia carousel 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; *see* 2:48-67, 3:26-42.

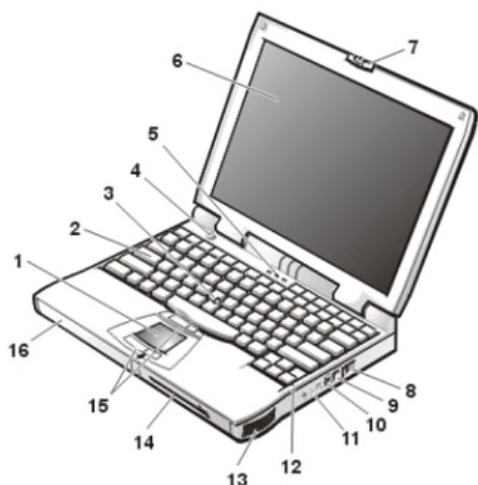
85. *Okaya's* carousel can be connected to and used with a video conferencing system or multimedia computer. EX1006, 3:1-4 ("[T]he multimedia carousel 10 includes Several input and output terminals for integrating with a multimedia computer or video conferencing system."), 3:22-25 ("Similarly, video 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 (not shown)."), 3:26-42 ("Similarly, video signals received at the video input terminal 202 from, e.g., a computer executing a multimedia application (not shown) or a video conferencing system (not shown), are processed by an integrated graphics processor 216 in accordance with video control Signals from the display control panels 22 (FIG. 1) before being provided to the display panels 16 for display thereon."). "In this manner, **video and audio** output produced by a multimedia computer or **received from a remote video conferencing terminal can be displayed and broadcast** using the multimedia carousal to participants seated around the carousel." *Id.*

86. Implementing the multimedia carousel to function with a video conferencing system or computer would have been a matter of ordinary skill to the POSITA. PC-based computers were well known to support video conferencing as described by *Okaya*. For example, *Okaya* describes that the multimedia carousel may be connected to a “computer running a multimedia application.” EX1006, at 3:26-27. Microsoft Netmeeting was one well known example of a “software tool that enables you to meet with others on a network,” where “you create a virtual environment where you and the other members of the virtual conference can communicate, collaborate, and interact in real time.” EX1017, at 32, 36 (describing NetMeeting’s support for video conferencing, which allows the “exchange of live video between two sites” using a computer). In addition to the commercial availability of software to implement video conferencing on a computer, it would have been a straight-forward implementation detail to configure the IO ports described by *Okaya* (e.g., in Figure 2) to be compatible with a commercially available PC. See EX1006, 3:49-52 (explaining that a multimedia computer is “connected” to the multimedia carousel “via its video and audio I/O ports”).

87. One well known example of a commercially available PC at the time was a Latitude CPx—a common business laptop available at the time from Dell, the owner of the *Okaya* patent. It would have been readily obvious to a POSITA to implement the I/O ports on *Okaya*’s multimedia carousel to function with

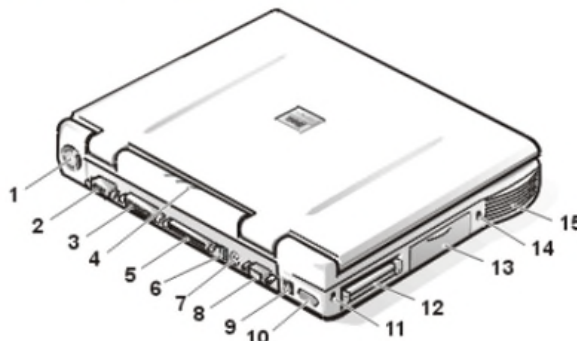
commercially available PCs such as the Latitude CPx. The Latitude CPx PC contained a number of I/O interfaces, as shown below:

Figure 1. Front View of the Computer



- 1 Touch pad
- 2 Keyboard
- 3 Track stick
- 4 Power button
- 5 Keyboard status LEDs
- 6 Display
- 7 Display latch
- 8 Air intake
- 9 Internal modem connector (available only on CPT S-Series)
- 10 S-Video connector
- 11 Audio jacks (3)

Figure 2. Back View of the Computer



- 1 Fan
- 2 Video connector
- 3 Parallel connector
- 4 Status indicator panel
- 5 Docking connector
- 6 USB connector
- 7 PS/2 connector
- 8 Serial connector
- 9 AC adapter connector
- 10 Infrared port
- 11 Security cable slot
- 12 PC Card slots (2)
- 13 Hard-disk drive
- 14 Security cable slot
- 15 Speaker

EX1020, pp. 6-7 (Figs. 1-2); *see also* EX1025.

88. These interfaces were designed to allow for the connection of various multimedia devices to the computer, including but not limited to external displays, microphones, and cameras. *See id.* As can be seen above, the Latitude CPx

contained various A/V I/O ports, such as the “video connector,” the “S-video connector,” the “audio jacks,” the “USB connector,” and PC cards located in the “PC Card slots.”⁹ *See, e.g.*, EX1020, pp. 6-7; EX1025. Dell’s product literature confirms that the S-Video port connects external cameras, the microphone port connects external microphones, and the video connector connects external monitors. *Id.* at pp. 82-83, 86-87. Implementing the multimedia carousel to function with such computers would have been a straightforward matter of implementing the input and output ports of *Okaya*’s Figure 2 to connect to such commercially available connectors. *Okaya* further teaches that the product team using the multimedia carousel could call an outside vendor “using their Zoom Video or plain old telephone system (‘POTS’) video conferencing card and/or peripheral.” EX1006, 3:56-59. This statement refers to a commercially available Zoom Video card compatible with the PC Card slot of a notebook PC, which was intended to improve video conferencing performance). It would have thus been well-known and obvious to implement *Okaya*’s multimedia carousel to function with well-known PCs and PC video conferencing software.

⁹ Further, it would have been obvious to a POSITA that such I/O could be implemented using PCMCIA specifications. *See supra* § IX.A.2.

89. When connected to a video conferencing system or multimedia computer, *Okaya* discloses that users of the multimedia carousel can communicate with remote users. EX1006, at 3:32-42. *Okaya*'s multimedia carousel or its combination with the computer/video conference system, thus comprises the claimed "communication service device."

90. *Okaya*'s system allows for communication with remote users via a packet network or a plain-old-telephone system (POTS). EX1006, 2:27-33, 3:26-42, 3:56-65, 4:8-15. For example, "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." *Id.*, 3:56-65, 4:8-15. *Okaya* thus expressly discloses connecting the multimedia carousel to a videoconferencing system or notebook PC to communicate over a network. This is consistent with how a POSITA would understand the system disclosed by *Okaya*.

91. *Okaya* also teaches connectivity via a "port for interfacing with an external system." EX1006, 3:56-59, Cl.1. *Okaya* expressly discloses connecting to a notebook PC, which would render obvious to a POSITA that the system could connect to other data networks. *Id.*, 3:26-4:14. A POSITA would have understood that *Okaya*'s teaching to conduct video conferencing with the multimedia carousel connected to a notebook PC would have involved the transmission of audio/video

data over a network, such as the expressly disclosed POTS or via other technologies including Ethernet, ISDN, or the Internet. *See, e.g.*, EX1017, 18 (describing that video conferencing involves the exchange of “live video between two sites” including a computer that can “send” and “receive” live video); p.116 (illustrating the sending and receiving of audio over a network/Internet between PCs), 137-38 (explaining that video data sent across a network has to stay “in sync” with the audio); 140-43 (describing the ability to transmit video over ethernet, ISDN, and the Internet).

92. For example, PCs were commonly used for communication over the Internet and/or LANs in the 1990s, as shown below in Figure 6-1 of the Microsoft NetMeeting Book, which also described similar networked communication for video conferencing:

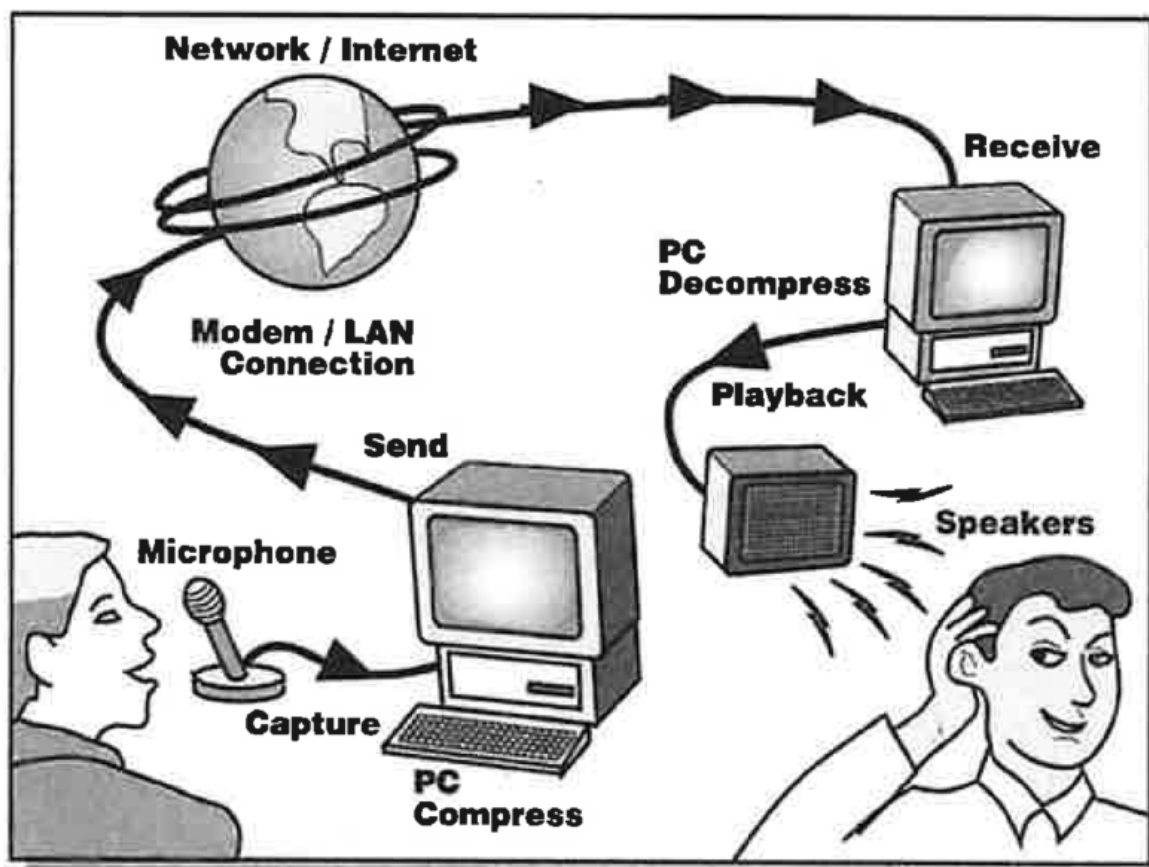


Figure 6-1. *Sending audio from one computer to another on a network.*

EX1017, p.116, 137 (explaining that audio and video go through the same compression, transmit, and replay sequence shown above in Figure 6-1), 142 (describing use of satellite broadcast, ISDN, phone, Ethernet, LAN/WAN, and Internet networks for video conferencing). Accordingly, a POSITA would have understood that connecting *Okaya's* carousel to a PC (e.g., as described above via PC A/V I/O ports or PC cards) would have connected the carousel to any number of networks for video conferencing.

93. Thus, a POSITA would have understood *Okaya* to disclose and/or render obvious connections to networks available to video conferencing systems and notebook PCs at that time, including Ethernet and/or the Internet, in addition to POTS.

b. **Claim 18[a]: “at least one user communication device configured to receive and transmit information over the communication network;”**

94. *Okaya* discloses a multimedia carousel that permits communication via a network. *See* claim element 18[p]. *Okaya*’s multimedia carousel discloses at least one claimed user communication device either alone, or when integrated with a video conferencing system or multimedia computer. *See* element 18[p]. *Okaya* discloses this limitation at least because the ports of the multimedia carousel can be connected to a video conferencing system or multimedia computer and permits up to four users to simultaneously communicate with a remote vendor over a network. EX1006, Fig. 2, 3:22-42 (“In this manner, **video 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.”), 3:56-4:14.

95. I note that Patent Owner’s infringement contentions interpret the claimed “communication service device” of 18[p] and the “user communication device” of 18[a] as descriptions of the same device, and I rely on that interpretation

in the instant petition. *See* EX1009, at pp. 2, 8-9. Similarly, the system's cameras capture images of each user, which are transmitted from the carousel (including intervening communication nodes that receive and transmit the received signals) over a communication network to the remote vendor's computer such that the remote vendor's display may view a split-screen showing each image. EX1006, 3:22-25, 3:62-65 ("The product team's leader speaks first, triggering the camera 18 in front of him, and his image instantly appears on the vendor's display panel (not shown)."), 4:7-11 ("the 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 the video conference is conducted over a POTs network).

96. A POSITA would have understood that the images from cameras 18 (on the multimedia carousel) are transmitted to the remote vendor's display from the cameras, and again from connected PC/video conferencing system and intervening nodes as the information is routed along the communication path. Consistently, *Okaya* teaches that video conferencing involves face-to-face conversations over a network, which is consistent with the understanding of a POSITA. The process of sending audio data over a network is illustrated in Figure 6-1 of the Microsoft NetMeeting Book, and the POSITA would understand that for video conferencing, a similar two-way process would occur with video data and audio data:

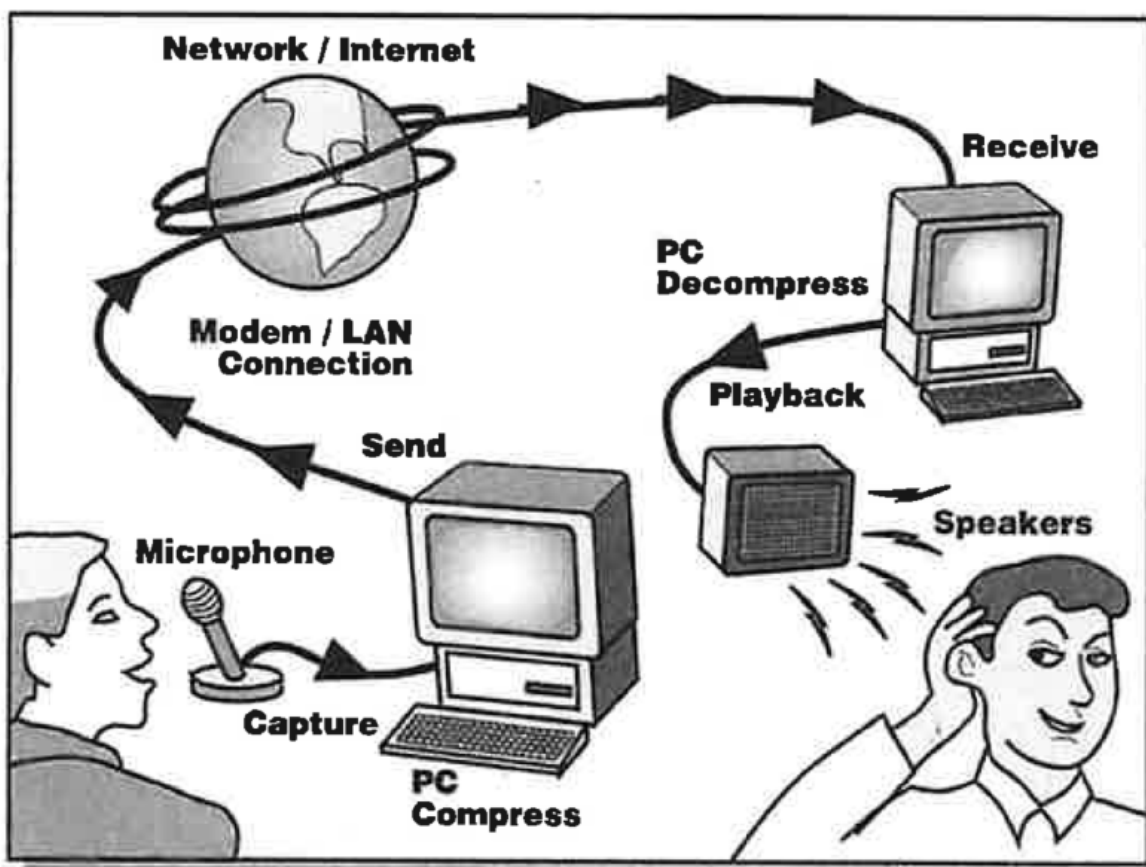


Figure 6-1. *Sending audio from one computer to another on a network.*

See EX1017, p.116; 137 (explaining that in video conferencing, video is sent “across a network” and that the audio has to “stay in sync” with the video); *see also* 18 (explaining that video conferencing is the “exchange of live video between two sites” and that you use your computer to “send[] and receive live digital video”).

97. As noted, *Okaya* discloses integration of the multimedia carousel with a PC or video conferencing system to permit network communications via standardized connections. EX1006, 3:1-12 (“Referring now to FIG. 2, it will be recognized that the 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).

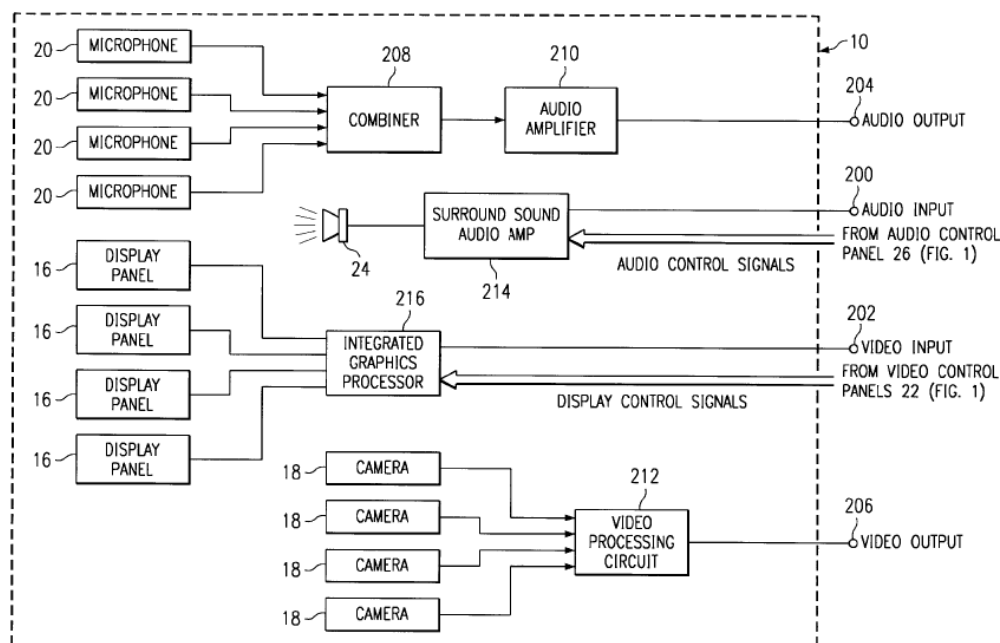


Fig. 2

98. It would have been understood and/or obvious to the POSITA how to implement the multimedia carousel to function with known multimedia PCs and video conferencing systems. *See supra* ¶¶86-89. For example, it would have been apparent and/or obvious to the POSITA to configure the inputs and outputs shown

above to the corresponding outputs and inputs of a commercially available notebook PC, as I have explained. An example is provided above with respect to the Dell Latitude CPx notebook PC, but a POSITA could have used any number of commercially available PCs having appropriate A/V I/O ports. Element 18[p].

c. **Claim 18[b]: “the at least one user communication device comprising a housing having a first side and a second side,”**

99. *Okaya* Figure 1 illustrates a multimedia carousel that includes “a housing” with four sides. EX1006, 2:49-60. The multimedia carousel disclosed by *Okaya* includes a “**media unit**” illustrated as element 14 of Figure 1, which corresponds to the claimed “housing.” As annotated below in Figure 1, the multimedia carousel’s media unit has four sides, including the claimed **first side** (annotated below in red), and **second side** (shown as opposite to the first side, at the location annotated in green below):

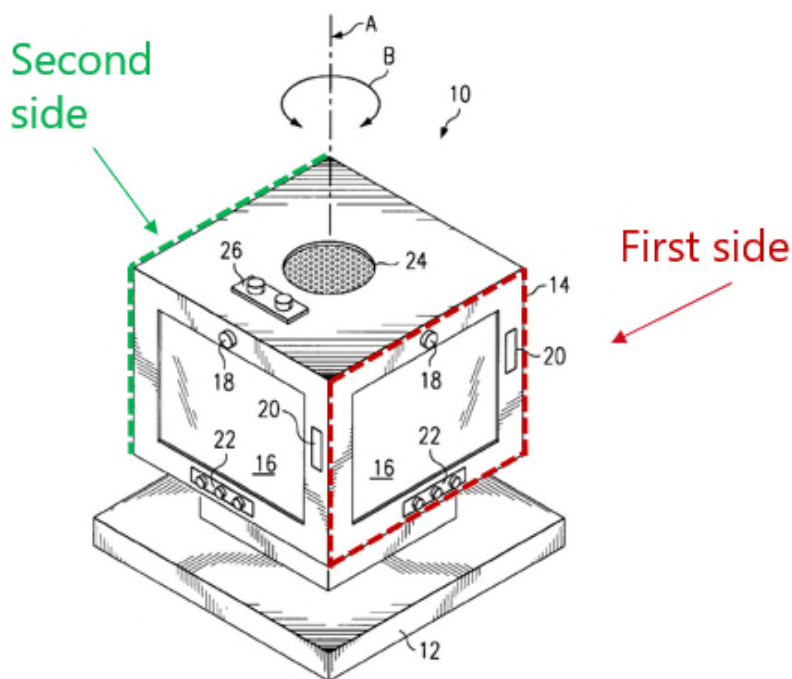


Fig. 1

100. This is further confirmed by the text of *Okaya* which expressly describes media unit 14 as having “four outwardly facing sides.” EX1006, 2:49-56 (“As shown in FIG. 1, the multimedia carousel includes a base 12 and a **media unit 14** 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.”).

- d. Claim 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,”

101. *Okaya* discloses that the multimedia carousel includes a **camera 18** (i.e., the claimed “first input device”) and a **display 16** (i.e., 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, only two of which are shown in FIG. 1, includes a display panel 16, a camera 18 and a microphone 20.”). Claim 20 expressly recognizes that the claimed “first input device” may comprise a camera.

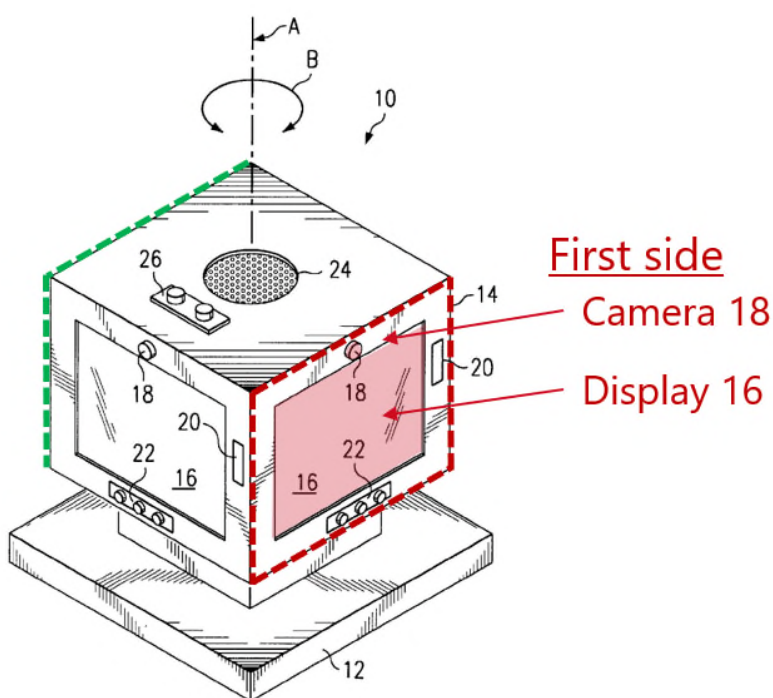


Fig. 1

102. 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 signals to a video output terminal (i.e., “input visual information”). EX1006, at 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 (“Similarly, 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.”), 3:32-38 (“Similarly, video signals received at the video input terminal 202 . . . are processed by an integrated graphics processor 216 . . . before being provided to the **display panels 16** for display thereon.”).

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

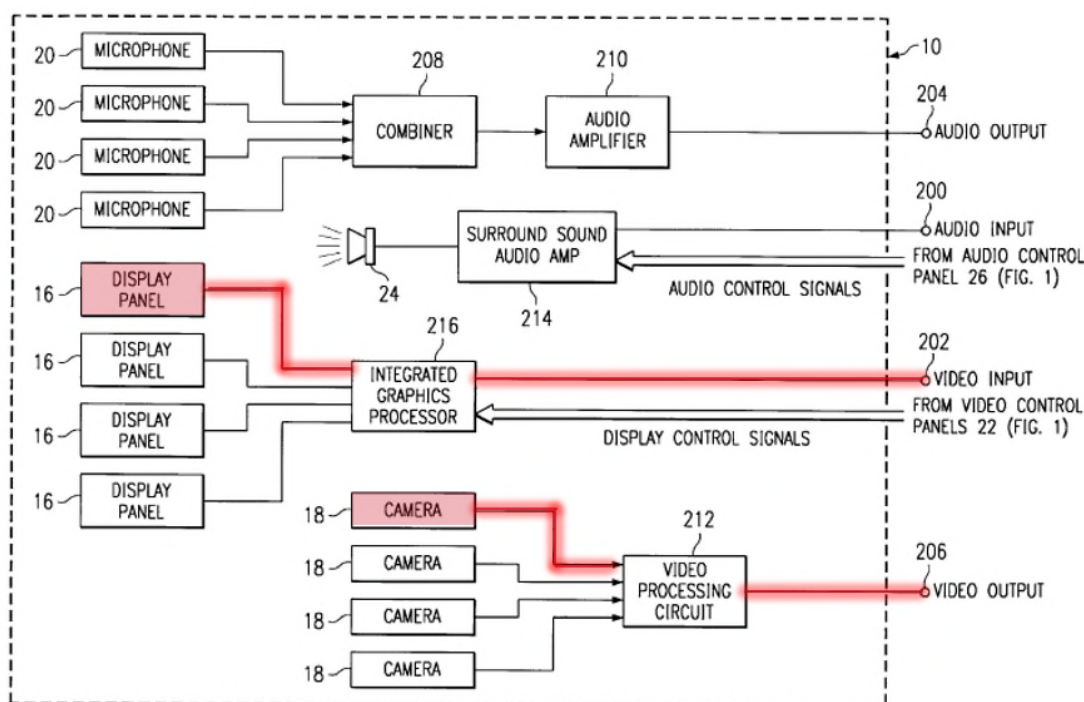


Fig. 2

104. 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 a video conferencing session, which produces video signals towards video output terminal 206, as shown above. EX1006, 3:22-25. Likewise, Okaya's display panel 16 is "configured to allow the at least one user to . . . output visual information" because a user facing that side can view the images received from video input 202 on display panel 16 during a video conferencing session. EX1006, 3:32-38.

105. *Okaya* discloses allowing “the at least one user to input and output visual information” in a “display control 22” that allows the user facing a side to control the camera and display panel on that side. EX1006, 2:53-60, Claim 3.

- e. **Claim 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;”**

106. As discussed above with respect to 18[c], *Okaya* discloses that each side of its media unit 14 contains a **camera 18** (which corresponds to 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, only two of which are shown in FIG. 1, includes a display panel 16, a camera 18 and a microphone 20.”). Claim 20 of the ’168 Patent expressly recognizes that the claimed “second input device” is a camera.

107. A POSITA would have understood based on the express disclosure of a camera and display on each of the four outwardly facing sides that the **second side** highlighted in **green** below would include the same components as shown on the two sides visible in the illustration (including the **first side**):

109. This **second camera 18** is “configured to input visual information” for the same reasons discussed for the first camera 18 in claim element 18[e] above. EX1006, 3:22-25 (“Similarly, 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.”). The POSITA would have understood this description to refer to the processing circuit 212 implementing the functions that correspond to the patent’s later description of presenting either a split screen view or a view of the person who is speaking. In other words, the POSITA would have understood that video processing circuit 212 could be configured to either output the signal from the camera 18 of the person speaking or to output a composite image combining all (4) four images from camera 18 to be produced at video output terminal 206.

110. Figure 2 of *Okaya* further illustrates how a second **camera 18** inputs visual information to produce a video signal towards video output terminal 206 via video processing circuit 212 (with **green** annotations added to illustrate input path of the **second camera 18**):

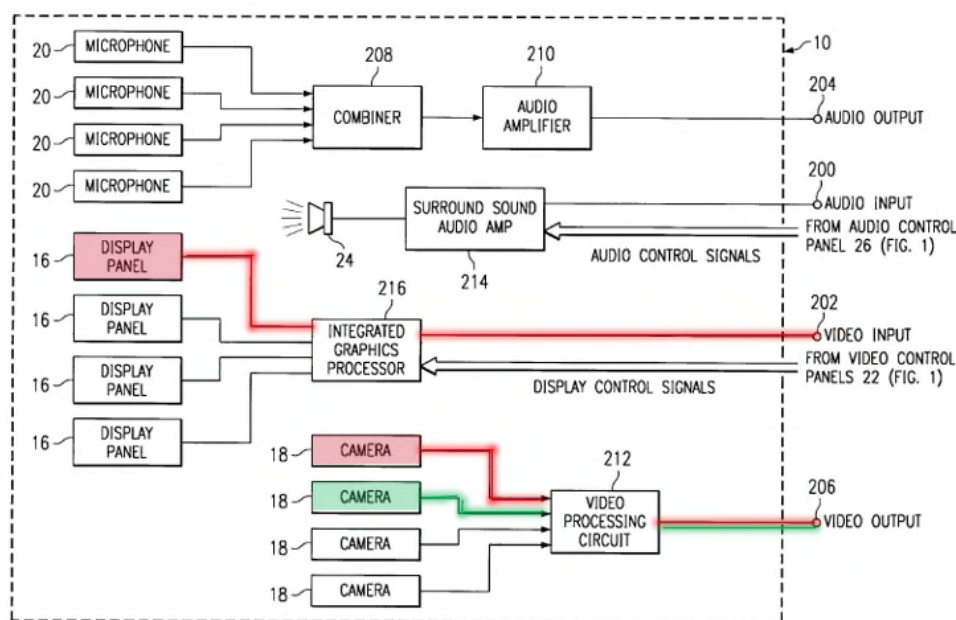


Fig. 2

111. *Okaya* explains that the video processing circuit 212 processes “video signals” received from the cameras 18 “as necessary” and makes them available at video output terminal 206. EX1006, 3:21-25. A POSITA would have understood from this disclosure (and Figure 2) that the video processing circuit 212 may combine video streams from each camera to form a split screen view. *See* EX1006, 4:8-14.

112. *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 a video conferencing session, which produces video signals towards video output terminal 206, as shown above. EX1006, 3:22-25.

- f. **Claim 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.”**

113. I have considered this limitation under two interpretations of the claim. *First*, where “at least one user” is interpreted to encompass preferred embodiments in which a first user accesses the first input device and display device from the first side at the same time a second user accesses the second input device (EX1001, 19:29-37, Fig. 5), *Okaya* discloses that an entire product team of up to four users access the media carousel at the same time, including a first and second user. *See* EX1006, 3:43-61.

114. *Second*, under Patent Owner’s apparent claim interpretation where a single user is merely controlling or using the first and second input devices and the 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, 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. EX1006, Fig. 2 (elements 212, 206), 3:22-25, 3:56-62. *Okaya* further discloses that any single user of the multimedia carousel “accesses” the cameras under at least Patent Owner’s

apparent interpretation because a user may can swivel the base of the multimedia carousel to adjust the camera feeds of other users. EX1006, 3:65-4:3.

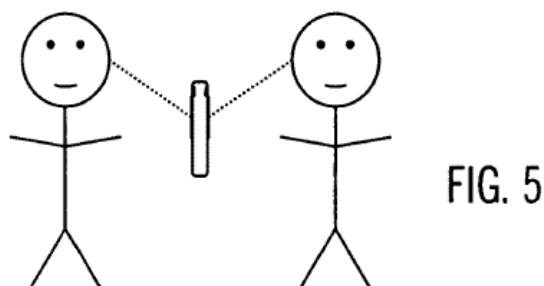
115. I explain each theory in more detail below:

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

116. If Element 18[e] is interpreted to cover the preferred embodiments described in the '168 specification (for example, as shown in Figure 5 of EX1001), *Okaya* discloses that *two* users may simultaneously access the claimed devices from opposite sides of the housing. EX1006, 3:38-42 (“In this manner, video 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 10 to participants seated around the carousel.”); 3:61-62 (“After the presentation, the cameras 18 are switched on and the proposal is discussed”).

117. The '168 Patent describes a preferred embodiment where each side of a device has a microphone, a camera, and a screen. EX1001, Figs. 3-6, 19:17-46. 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. See EX1001, Figs. 3-6, 19:17-46 (describing a doctor accessing one side of the device while a hearing-impaired person accesses the device from the other side).

118. Figures 5 illustrates this—showing two users each respectively accessing components on opposite sides of the device:



119. Indeed, the claim originally recited two users explicitly, until it was amended (without explanation) in prosecution. EX1003, 320, 492 (amending Claim 21, renumbered after allowance to Challenged 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.

120. *Okaya* discloses up to four users simultaneously using the multimedia carousel from their respective side of the carousel to conduct a video conference with a remote vendor. EX1006, 3:38-42. See Elements 18[p]-18[d], above. *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, 3:61-62, 3:65-4:3, 4:3-14.

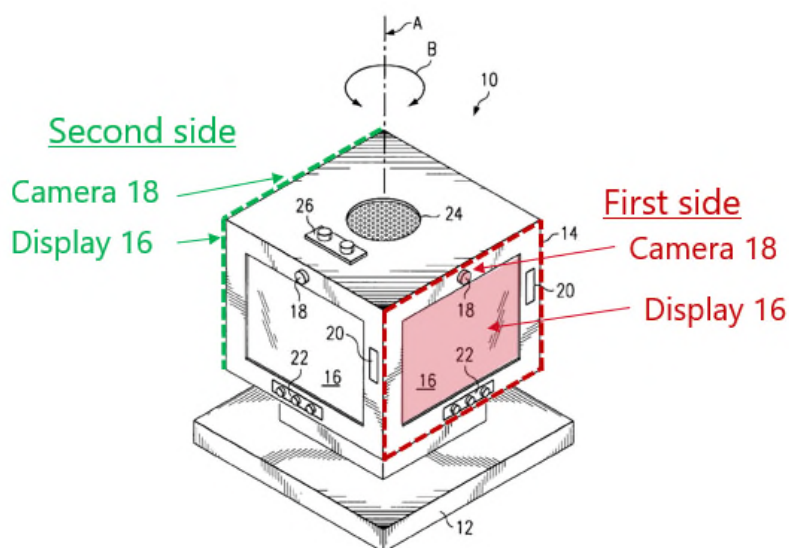


Fig. 1

121. The POSITA would have thus understood that a team member 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. *See, e.g.*, EX1006, 1:16-21 (explaining that video conferencing enables “face-to-face conversations”). Similarly, *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’ . . . on the [remote] vendor’s display panel”). *Okaya* expressly describes that team members participating on the video conference with the cameras switched on 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 displays 16 during the video conference would include a video of the remote participant. See EX1006, 1:16-21 ("In a typical video conferencing [] system, ... persons in remote locations [] conduct face-to-face conversations."); see EX1017, 18 (explaining that video conferencing is the "exchange of live video between two sites" and that you use your computer to "send[] *and receive* live digital 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 a 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, 18. The POSITA would have thus understood, or at least found obvious, that the users of the multimedia carousel

would view such content on panels 16 at the same time that the camera feeds were capturing images of the team so that they could be **simultaneously displayed** in a “split screen” on the remote vendor’s display panel. *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 on a second side of the device.

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

122. Patent Owner’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, pp.81-82 (mapping claim element 18[e] to “preview[ing] all lenses” and “recording with the front and rear cameras at the same time”), pp.90. Patent Owner’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” as to “to be able to use” something). Without expressing an opinion on whether this interpretation is correct, I rely on this interpretation for the theory presented in this subsection as well as in Grounds 3 and 4 below.

123. Under this claim interpretation, *Okaya* discloses or renders obvious the claim. *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. *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 multimedia carousel. *See supra* § X.A.1.f(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. As explained above, the multimedia carousel connects (*e.g.*, via the I/O shown in *Okaya* Figure 2) to a PC or videoconferencing system, which connects to a remote computer via a communication network such as the Internet or POTS networks. *See* analysis above for elements 18[p], 18[a].

124. *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 found it obvious for one team member (*e.g.*, *Okaya*’s team leader) to switch on the cameras, connect the various audio/video input/output ports shown in 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.¹⁰ *See supra* ¶¶86-89. Once the necessary connections to the PC or videoconferencing system were in place, that single team leader would call the remote participant, who would then receive a split screen view containing an image from each camera on the carousel. EX1006, 4:8-14. The team leader could initiate the call with well-known video call software such as Microsoft NetMeeting, and use any peripherals (such as a Zoomed Video card) helpful for interfacing or improving call performance. EX1006, 3:56-59; EX1020, pp.6-7, Figs. 1-2; EX1025; *see generally* EX1017.

125. *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, 3:32-38. 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. EX1006, at 3:1-12. As I explained above, the POSITA would well understand how

¹⁰ 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.

to make the connections and establish the video calls described by *Okaya* using commercially available PCs and PC software. *See supra* ¶¶86-89.

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

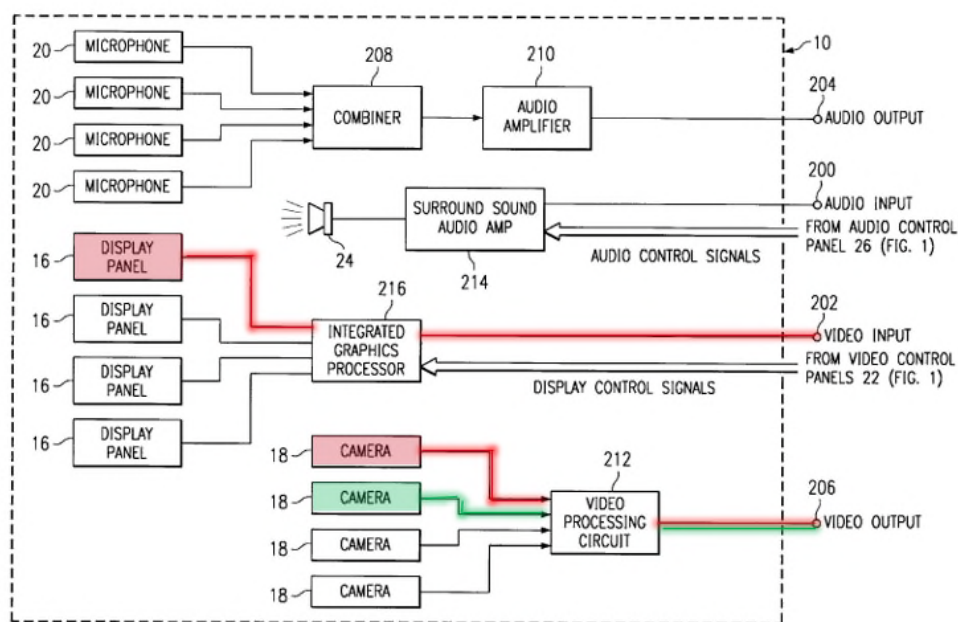


Fig. 2

127. The video output terminal 206 includes access to a “first input device” (a first camera) and a “second input device” (a second camera). By connecting the multimedia carousel to a multimedia PC or video conferencing system and operating the carousel’s cameras, at least one member of the team accesses these two input devices “at the same time.” For example, a team member accesses all cameras of *Okaya*’s multimedia carousel (via video output terminal 206, as show in Figure 2),

when performing a video call on a PC connected to video output terminal 206 by accessing all the cameras and transmitting the camera feeds to a remote caller for viewing on the remote caller's split screen. EX1006, 3:56-61, 4:8-14; *see also* EX1020, pp.6-7, Figs. 1-2; EX1025.

128. *Okaya* expressly provides that “[o]nce they have accomplished this, 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. As I have previously explained, it would have been understood to the POSITA 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 at least one of the four team members using the notebook PC or video conferencing system. See my analysis above for 18[p], 18[a]. The team member could call, for example, using a PC card in a notebook PC such as a Zoom Video (also known as “Zoomed Video”) card. *E.g.*, EX1020, Fig. 2, p.51 (permitting use of “zoomed video (ZV) PC card”). A POSITA would have understood that Zoom Video cards improved video call performance by writing video data directly for display rather than relying on the system bus.

129. This would have been especially apparent to the POSITA given that the discussion of using a video conferencing card immediately follows a description of one member having connected his notebook PC to the multimedia carousel for the purpose of giving a PowerPoint presentation to the members of the team. EX1006, at 3:46-53. It would have thus been known, or at least obvious, for one of the members of the product team to use the notebook PC with an appropriate videoconferencing card to hook up the laptop to the audio/video output 206, switch the cameras on, and to then call up the outside vendor, thereby accessing all of the camera feeds for connectivity to the remote vendor's computer.

130. For example, the POSITA would have known that the Zoom Video conference card referred to by *Okaya* was a well-known PCMCIA card that could be used for video conferencing in a notebook PC. EX1020, Fig. 2, p.51 (permitting "Zoomed Video" in PC card slots); EX1021 (explaining PCMCIA standards and types of PC cards, including "Zoomed Video" cards); EX1022 (explaining function and applications of Zoomed Video). 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."). The notebook PC or video conference

“accesses” the video feeds for the purpose of transmitting the images to the remote vendor’s computer, as is described by *Okaya*. EX1006, at 3:49-62, 4:3-14.

131. 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 the cameras by using his own camera and viewing his own local display panel 16. EX1006, 3:22-25, 3:32-42, 3:65-4:3, 4:8-15.

132. In addition, *Okaya* discloses or renders obvious that any user of the multimedia carousel can control (i.e., “access” in Patent Owner’s view) the cameras of other users by adjusting the multimedia 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 have understood 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, and thereby controlling the images being transmitted to the remote vendor. Accordingly, 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” according to either of these interpretations of this claim limitation.

2. Claim 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.”

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

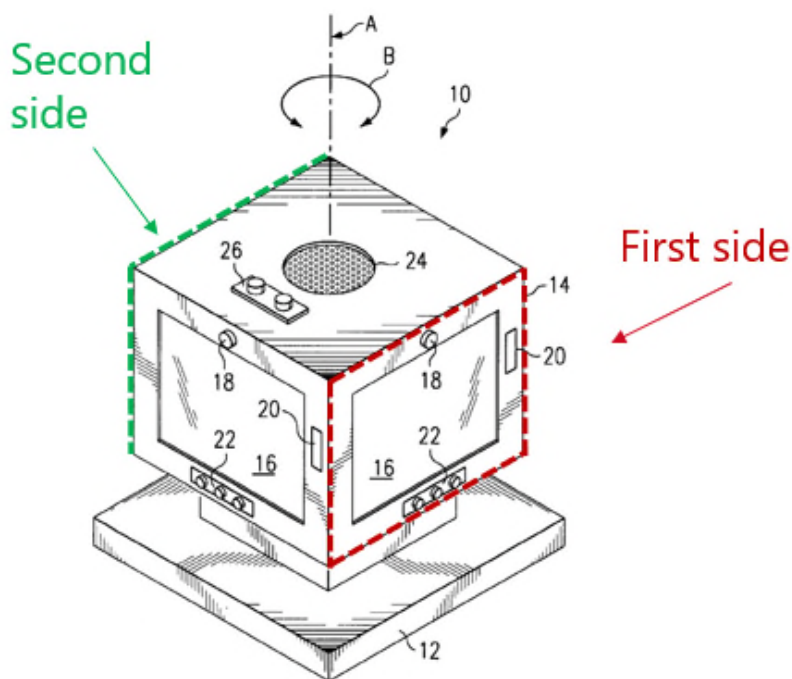


Fig. 1

134. 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.

3. Claim 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.”

135. See claim elements 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* Figure 1 and corresponding description disclose a camera on each side of the media unit 14.

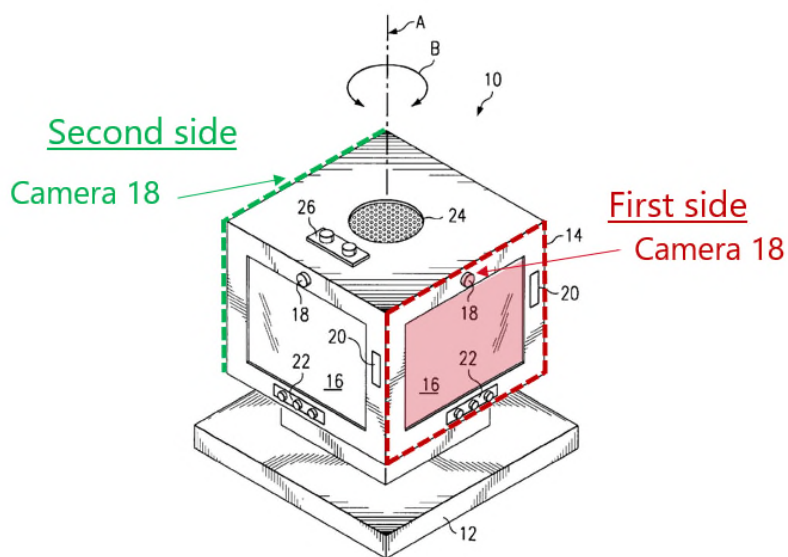


Fig. 1

136. *Okaya* states that “[e]ach 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 and a microphone 20.” EX1006, 2:53-56, 2:65-67.

4. Claim 21: “The communication services device as claimed in claim 19 includes, a second display device residing on the second side of the housing.”

137. *Okaya* 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.

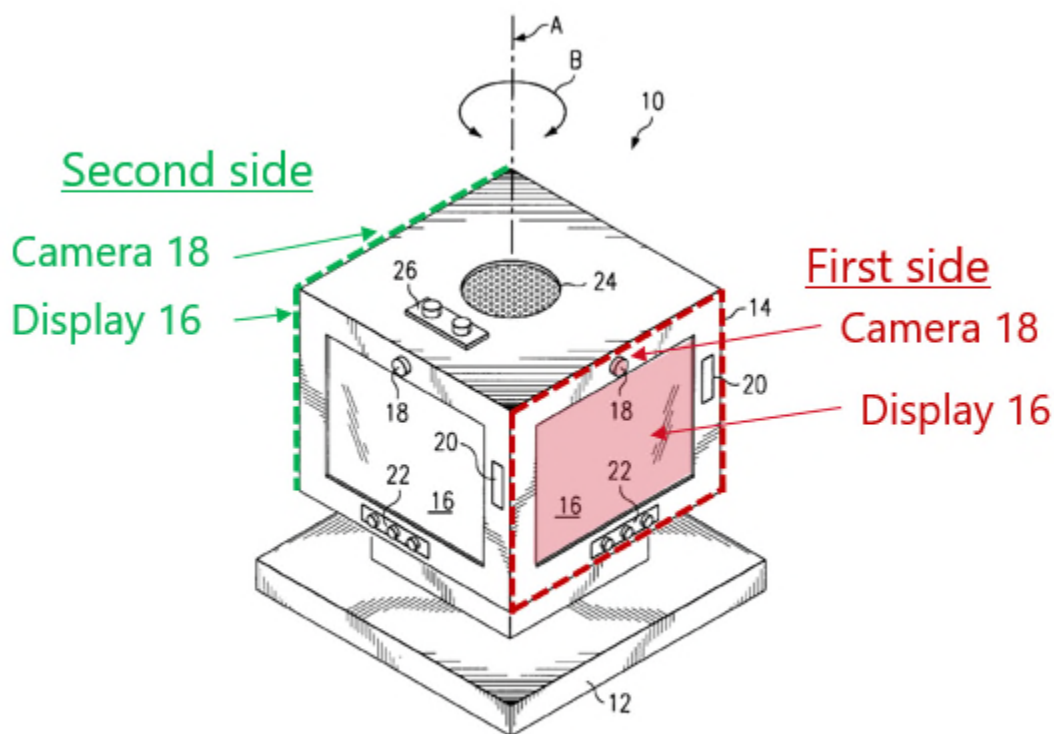


Fig. 1

EX1006, Fig. 1. “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 and

a microphone 20.” EX1006, 2:53-56. *Okaya* further discloses that its “display panels 16” may be “active matrix displays.” EX1006, 2:65-67.

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

1. Claim 18

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

138. To the extent the preamble of Claim 18 is limiting, *Harma* discloses a communication service device operable with a communication network. *Harma* discloses that the “invention relates to **a mobile phone** comprising a camera.” EX1008, 1:4-6. *Harma*’s mobile phone corresponds to the claimed communication service device, which is operable with a radio network, a form of communication network. The POSITA would have understood the term “mobile phone” to refer to a class of telephony devices that provided cellular radio service over a radio access network. See EX1015. Mobile phones were well known, and indeed, ubiquitous communication services devices for communicating over telephone networks by the Relevant Date. I have cited examples of such devices in the technology background section, which were commercially available before the Relevant Date. See Section IX.

139. *Harma*’s mobile phone is illustrated below:

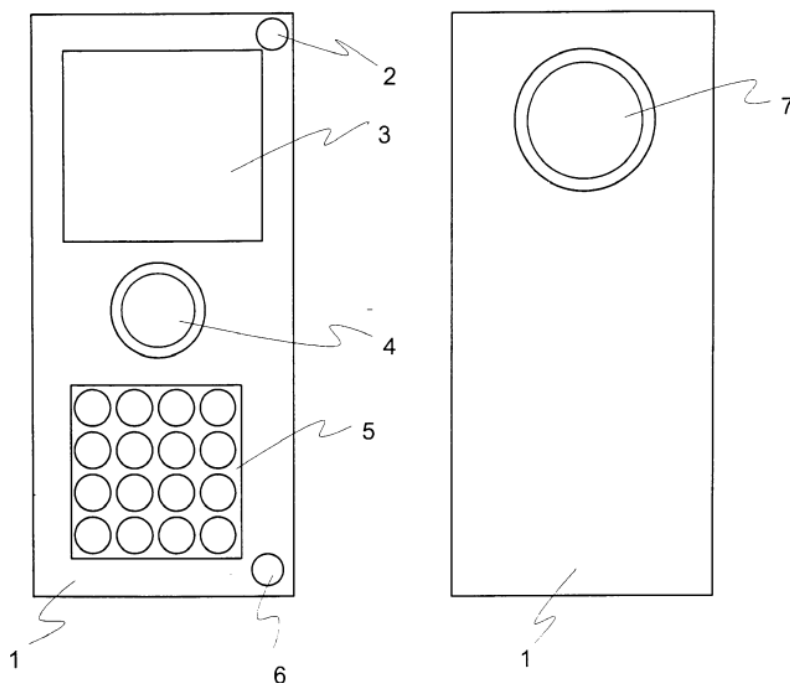


Fig. 1a

Fig. 1b

140. Figure 1a illustrates “a mobile phone” that is “seen at the front.” EX1008, 4:16-18. “On the front side of the mobile phone 1, i.e. on the side that faces the user when operating the device, there is arranged a . . . display 3 [and] first camera 4.” *Id.* at 4:17-20. Figure 1b illustrates the same mobile phone “viewed at the rear.” EX1008, at 4:24-25. “In this preferred embodiment, the 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.” EX1008, at 4:25-27.

141. *Harma* discloses that its mobile phone includes a “radio transmitter/receiver 20” that “also functions as in known mobile phones” and describes its mobile phone as used “in a video conference.” EX1008, 1:21-24, 5:29-

30. It was commonly understood by POSITAs that mobile phones including the radio components described by *Harma* were for cellular communication service and were operable with radio cellular networks. It would have been manifestly obvious that the mobile phone disclosed by *Harma* was operable with a cellular communication network. See EX1015, p.3 (defining a “mobile telephone” as providing “access to (1) the public telephone network via one base station” or “(2) other mobile telephone stations via one or more base stations.”); EX1016, p.3 (defining “mobile phone” to include “telephones used in a cellular radio system”).

b. Claim 18[a]: “at least one user communication device configured to receive and transmit information over the communication network;”

142. See 18[p]. *Harma* discloses a mobile phone, which is a user communication device configured to receive and transmit information over a communication network. Indeed, this is how the POSITA would have understood mobile phones available at the time to work. EX1015, EX1016.

143. I note that Patent Owner’s infringement contentions interpret the claimed “communication service device” of 18[p] and the “user communication device” of 18[a] as descriptions of the same device, and I rely on that interpretation in the instant petition. EX1009, at pp.2, 8-9.

144. The radio transmitter/receiver is highlighted below in Figure 4 of *Harma*:

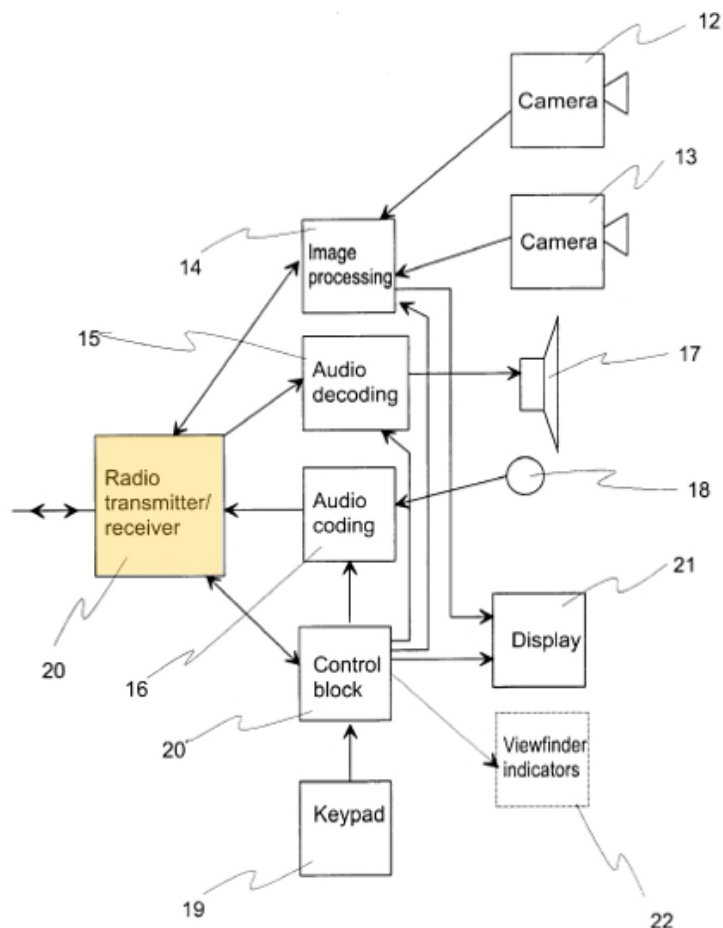


Fig. 4

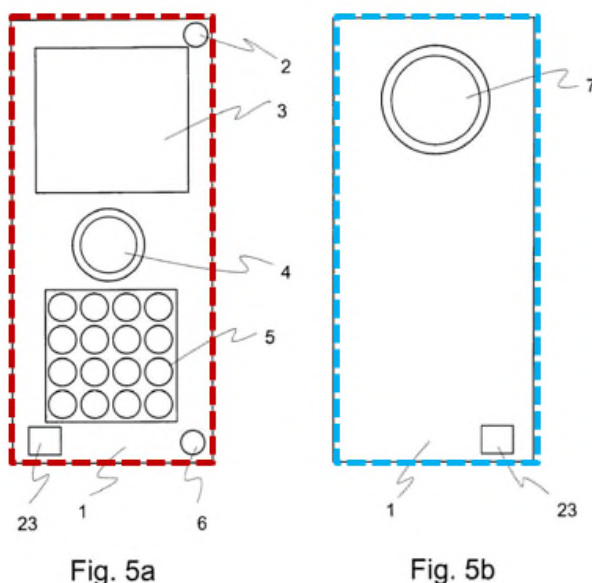
145. The radio transmitter/receiver 20 “functions as in known mobile phones.” EX1008, at 5:29-30. The POSITA would have readily understood that the radio component shown above functioned to communicate with a cellular radio network. EX1015, EX1016. Indeed, the POSITA would have understood the double arrow to the left of radio transmitter/receiver shown above to expressly refer to radio communications conducted by the radio/transmitter 20 with a network, such as a cellular access point or base station.

146. *Harma* further suggests that mobile phone can be used for “video conferencing.” *Id.* at 1:4-5 (“More and more often mobile phones include a camera that enables capturing still images and video clips, as well as their use in video conferences”). Video conferencing is another form of communication that involves receiving and transmitting information over a communication network. The POSITA would have understood that video conferencing using the mobile phone disclosed by *Harma* would have involved the exchange of audio and video data over the radio network and other components of the network with a remote user. 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 video conferencing 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 video calling). It would have been obvious to a POSITA to implement the disclosed videoconferencing embodiment via a communication network formed 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”). Indeed, the POSITA would have understood that the radio transmitter/receiver would have been the primary component of the mobile phone

responsible for exchanging information with the remote video conference participants via radio communications with the network.

c. Claim 18[b]: “the at least one user communication device comprising a housing having a first side and a second side,”

147. *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 5b (annotated below to highlight the first side and second side):



148. 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.

149. A POSITA would have understood that *Harma*’s Figs. 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 23. EX1008, 5:4-6, Fig. 2, 6:15-16, Fig. 5b. As another example, Figure 3 “illustrate[s] ... using the mobile phones according to the different embodiments” and Figure 4’s block diagram illustrates “the operation of the mobile phones,” such as those shown in Figs 1, 2, and 5. EX1008, 4:8-12. Accordingly, to the extent that I rely on descriptions of different figures, it is my opinion that the POSITA would have understood 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.

d. Claim 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,”

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

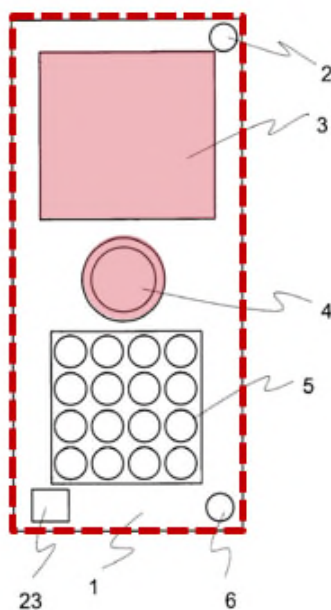


Fig. 5a

151. 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, i.e. on the side that faces the user while operating, 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. The rest of the elements can likewise be arranged in some other order than the one illustrated in the drawing.” EX1008, at 6:4-11.

152. *Harma* further explains that a user may input and output visual information via **display 3** and **camera 4**. EX1008, 5:7-23, Figs. 3. For example, *Harma* discloses that the block diagram of Figure 4 illustrates “operation of the mobile phones” of Figures 1-3 and 5. 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. 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.

153. As described with respect to Figure 4, *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, 4:32-5:6 (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

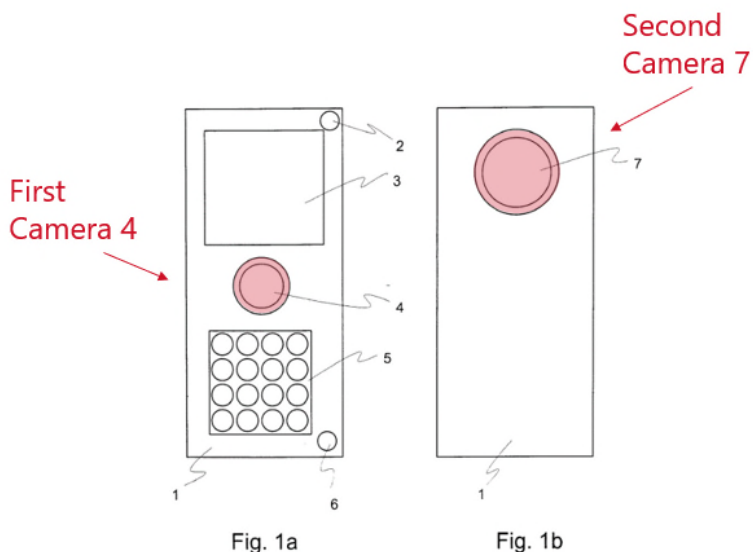
a “control block” that “show on the display 21 an imaged captured by the camera 12 or the camera 13 or both” or may “combine on the display 21 an image produced by the camera 12 or the camera 13 or both with an image received by radio by the radio receiver 25.”), Figs. 2, 4, 5a, 5b.¹¹

e. **Claim 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;”**

154. See 18[c]. *Harma* 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, 5:7-23, Fig. 3, 4:28-5:23, 5:9-13, 5:31-35, 6:4-11, Figs. 2, 4, 5a, 5b.

¹¹ As explained above, a POSITA would have understood that Figure 4, which describes functional components and interfaces of *Harma*’s mobile phones, was operable with the embodiments of Figures 1-3 and 5. A POSITA would further have known to combine *Harma* Figure 4, a block diagram “illustrating the operation of the mobile phones,” with the embodiments of *Harma* Figures 1-3 and 5, which describe common elements of a mobile phone.

155. *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. There is further illustrated an optical viewfinder 23.”). *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, Fig. 2.

156. *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, 4:32-5:6 (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 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.¹²

¹² A POSITA would have understood that Figure 3, which “illustrates various possibilities for using the mobile phones,” was operable with the embodiments of Figures 1-2 and 5 (as well as Figure 4, as explained above). A POSITA would also have known to combine *Harma* Figure 3, which describes uses cases for *Harma*’s mobile phone, with the mobile phone embodiments of *Harma* Figures 1-2 and 5, which describe common elements of a mobile phone.

- f. **Claim 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.”**

157. See 18[c]-18[d]. *Harma* discloses these limitations at least under Patent Owner’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 Section X.A.1.f(2), above (explaining Patent Owner’s interpretation of these limitations). Applying Patent Owner’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 at least via viewing a split-screen image of the images captured by the two cameras. EX1008, 5:7-23, Fig. 3, 4:32-5:13, 5:31-35, 6:4-11, Figs. 2, 4, 5a, 5b.

158. *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, 5:9-13 (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 combines received images and/or images from cameras), Figs. 2, 3a, 4, 5a, 5b.

159. *Harma* illustrates how both cameras may be “accessed” by a user 8 to view a split screen of the images captured by the first and second cameras:

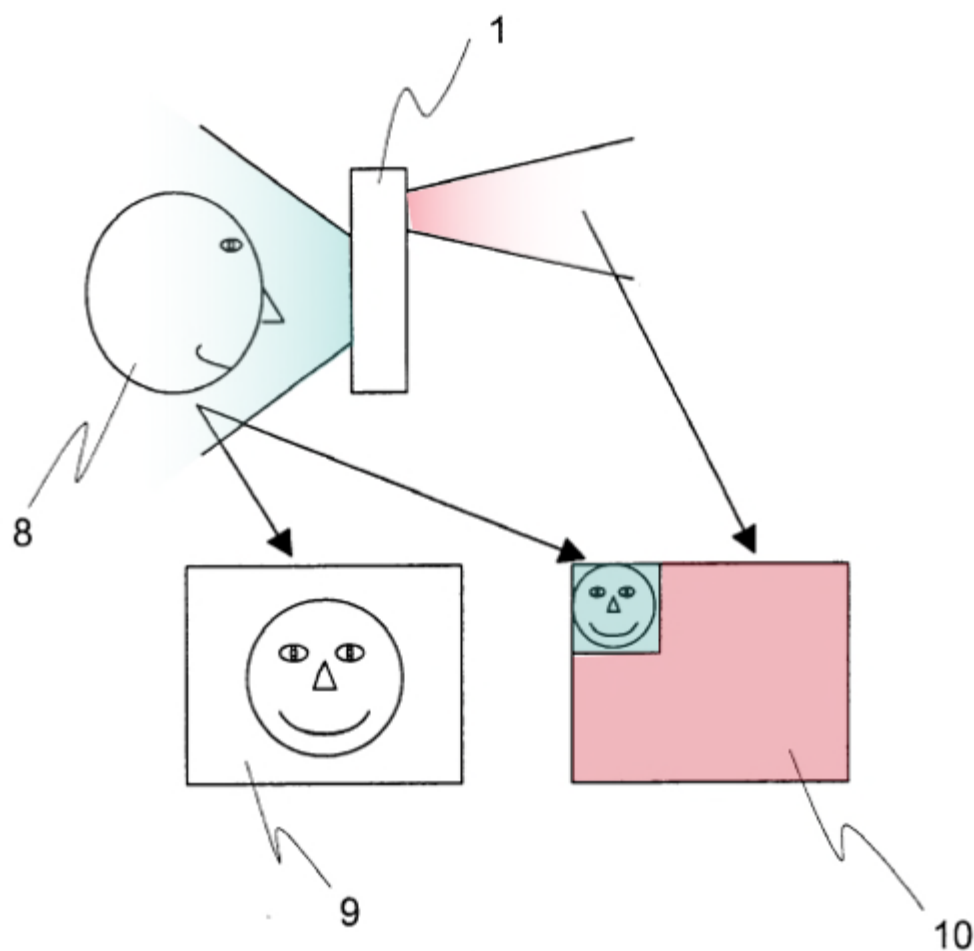


Fig. 3a

160. 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, 5:11-14, Cl. 6 (“[T]he display (3) is arranged to show simultaneously the images of the first camera (4) and the second camera (7).”). It would have been understood and obvious to the POSITA 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. The first user could easily accomplish this by orienting the aperture of the second camera so that the desired image was in view and displayed as image 10.

161. As such, *Harma* discloses, at least under Patent Owner’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.”

2. Claim 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.”

162. See 18[b]-18[e]. *Harma* discloses these limitations. As shown in element 18[b]-18[e], the first and second side of the mobile phone (containing each

camera) are on opposite sides of the device. *See, e.g.*, EX1008, at Fig. 5, 6:4-11 (“Figure 5a is . . . a mobile phone 1 . . . seen at the front.”), 6:12-16 (“Figure 5b is . . . 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.”).

3. Claim 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.”

163. *See* claim elements 18[c]-18[e]. As explained above, cameras are the claimed input devices described by *Harma*.

C. Ground 4: Claims 18-21 are rendered obvious over *Nagasawa* in view of *Harma*¹³

1. Motivation to Combine

164. A POSITA would have been motivated to combine *Nagasawa* with *Harma* to arrive at the claimed invention for various reasons explained below. *Nagasawa* and *Harma* are in the same field of endeavor—mobile telephones—and both are 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 that are each aimed at

¹³ As it relates to Ground 4, a POSITA would have been aware of the teaching of *Harma* described in Ground 3. *See supra*, §X.B.

enhancing the phone's multimedia capabilities and adding features extending the phone's use beyond that of conventional telephone calls. EX1007, at 1:24-27; EX1008, 1:25-28. As I explained in my technical background section, the POSITA was motivated by the market forces and industry trend 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. *See* Section IX, above.

165. *Nagasawa*, for example, describes adding a second display to the outer surface of a foldable telephone, which *Nagasawa* teaches can allow the telephone to be used for gaming while the foldable telephone is in a folded position. EX1007, 3:66-4:16, 1:38-43. Meanwhile, *Harma* describes adding a second camera to the phone to enhance the enablement for "capturing still pictures and video clips." EX1008, 1:21-28. The POSITA would have been motivated by the industry trend towards convergence to combine each of these multimedia enhancements to obtain the benefits of both of these multimedia features in a single device. A POSITA would have expected success in combining *Nagasawa* and *Harma*, as the combined device would continue to provide the gaming and display features of *Nagasawa* while adding the camera and videoconferencing features described in *Harma*. Indeed, the combination of such devices into a single combined multimedia device

is entirely consistent with the convergence movement I described in my technical background. *See supra* Section IX.C. For example, as I described above, it was already well known to combine cameras with gaming systems, as was previously done with the Gameboy. *Id.* As illustrated below, the POSITA was also aware of the known ability to combine multiple cameras into the “same housing” of a foldable telephone. *See* EX1019, [0001] (introducing a “communication terminal ... that has multiple cameras in the same housing”), Figs. 1-2.

Figure 1

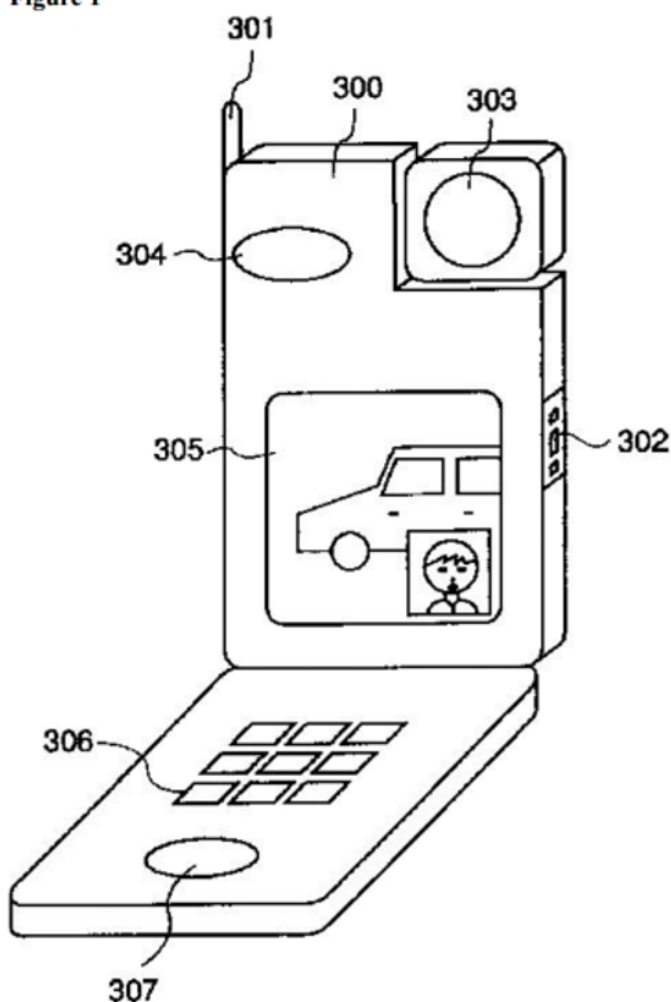
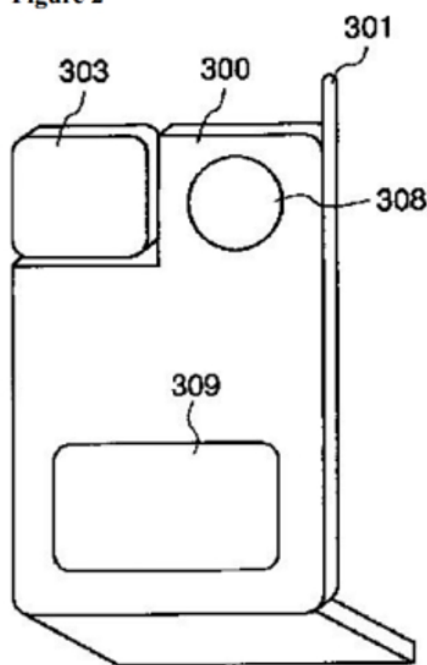
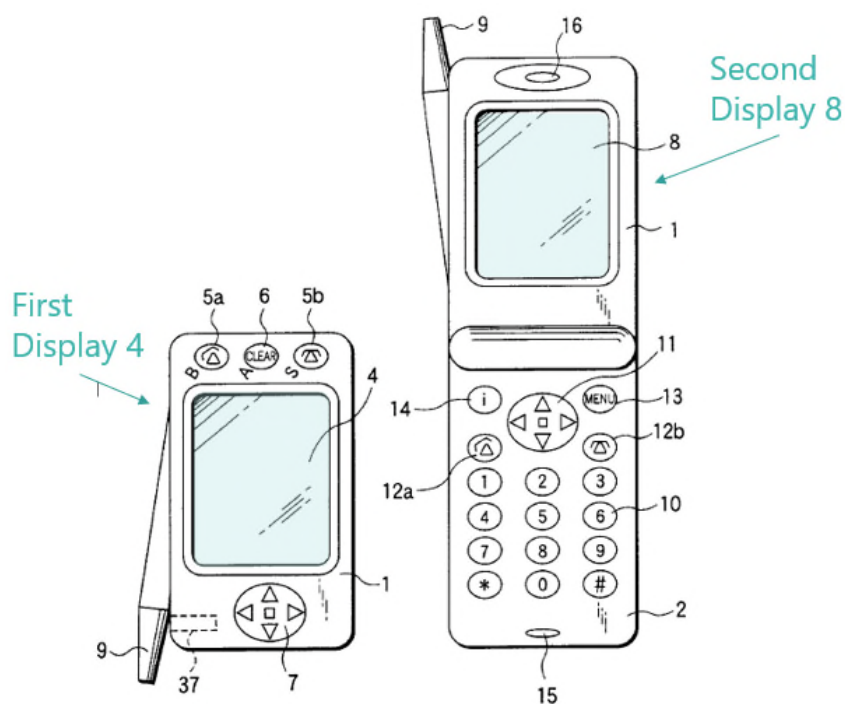


Figure 2



166. To illustrate, *Nagasawa* is concerned with providing a mobile telephone in a foldable housing that provides the same features as conventional mobile telephones. EX1007, at 1:24-27. The advantages of foldable mobile telephones (aka “flip phones”) were well known to POSITAs at the time. *See* EX1010, at 1 (describing the ability to transport folded phones having “large-screen” displays in a “compact size” when not used). POSITAs would have been motivated to continue to add new capabilities to flip phones—and adding multiple displays and cameras was known in the art. *See, e.g.,* EX1010, at 1-2 (placing a “display on the outer surface” of a foldable phone to enable use of various features “with the body folded”); EX1019, [0001] (describing a foldable phone having “a plurality of cameras in the same housing” to enable video calling), Figs. 1-2.

167. *Nagasawa*’s folding portable telephone includes two displays, one on an inner surface of the telephone that can be used when the telephone is in an unfolded position (EX1007, 3:66-4:16) and one on the outer surface that can be used to play games when the telephone is in the folded position (3:49-65). *Nagasawa*’s foldable telephone illustrates the phone in a folded (below, left) and unfolded position (below right) in Figures 11B and 11C (color annotations added below to highlight displays 4 and 8):



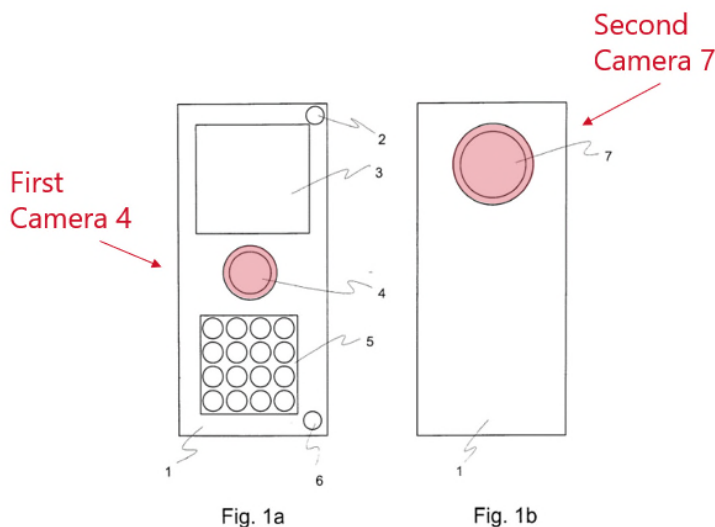
168. *Nagasawa* “aims at providing folding portable telephone apparatus having the same operability and compact shape (form) and standard features as portable telephone apparatus.” EX1007, at 1:24-27. *Nagasawa* further teaches an embodiment that includes a camera and that can be used for video conferencing. EX1007, at 7:37-40 (“Video conference display may be provided . . . in order to provide folding portable apparatus equipped with a small-sized TV camera 53 at the hinge.”).¹⁴ *Nagasawa* thus expressly teaches the POSITA to include standard

¹⁴ Although this passage is describing *Nagasawa*’s fifth embodiment of Figure 12B, a POSITA would have known to implement elements of the fifth embodiment of Figure 12B with the third embodiment of Figures 11A-11C, as both embodiments

features that are available on other portable telephones (like cameras and video conferencing), which would have motivated the POSITA to look for additional standard features to include in an improved device, consistent with the convergence movement that I have previously discussed.

169. *Harma* provides a conventional telephone that teaches the benefits of two opposing cameras, 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 (color annotations added to emphasize elements 4 and 7 below).

share common elements. *Compare* EX1007, Figure 11, *with* EX1007, Figure 12B. A POSITA would also have known that additional elements of the fifth embodiment are compatible with the third embodiment of Figure 11 and would have found it obvious to implement them in the third embodiment. The description of Figure 12B is thus applicable to Figures 11A-11C.



170. *Harma*'s purpose is to "provide a mobile phone that 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 the desirability of "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.* at 1:6-2:5. This teaching would have motivated a POSITA to include two cameras facing different directions in order to provide the flexibility of filming the two user cases taught by *Harma*.

171. *Harma* discusses an example of this where the combined video streams of the user (imaged via the front camera, annotated in blue) and the user's surroundings (imaged via the rear camera, annotated in red) from the two cameras are shown. EX1008, 1:6-2:5, Figs. 3a, 3b, 5:7-13. This is illustrated in Figure 3a below:

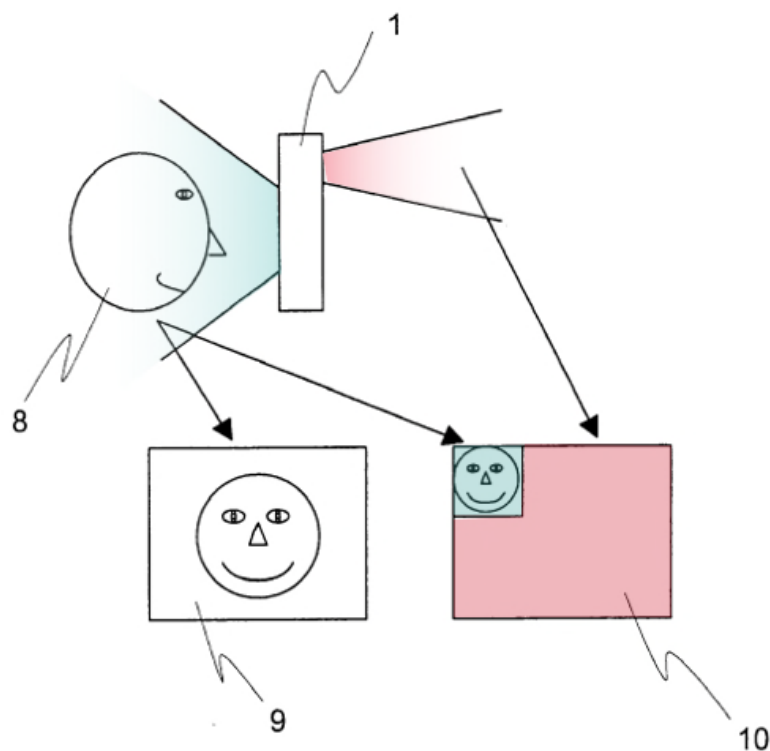


Fig. 3a

172. *Harma* describes that the user's image can be displayed as a smaller image in "addition to the image captured by the other camera" (shown in the lower right above). EX1008, 5:7-13. The POSITA would have understood the benefit of providing a selfie camera and providing a camera that could take longer shots. It would have provided the ability to take images of oneself as well as take images of other people and objects simultaneously.

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

173. The POSITA would have been motivated to enhance the video conferencing capability of *Nagasawa* to obtain the feature benefits described by

Harma of dual cameras. 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. *See generally* EX1019. The POSITA would have immediately recognized the benefits of doing so. For example, the POSITA would have been motivated to implement two cameras facing different directions as taught by *Harma* in the base system of *Nagasawa* to obtain the enhanced two-camera features described by *Harma*, including the ability to simultaneously capture the camera shots described by *Harma*. This would have provided the system of *Nagasawa* discussed above (*e.g.*, a foldable portable phone with two displays), with the added benefits of two cameras taught by *Harma*, one on each side of the device. For example, this would have imbued the foldable portable 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. 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 factor, 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*. 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.

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

174. A POSITA would have a reasonable expectation of success in adding the cameras disclosed in *Harma* to the base system of *Nagasawa*. Both *Harma* and *Nagasawa* describe similar telephone devices that include radio transmission and reception, keypad, controller, microphone, speaker, and displays. EX1008, 5:24-35, Fig. 4; EX1007, Figs. 11A, 11B, 11C, 7:5-51. The addition of cameras to *Nagasawa*'s phone, along with supporting hardware and software modifications, would have been well within the ordinary level of skill in the art. *Harma* teaches as much by describing adding cameras to a mobile phone to improve videoconferencing.

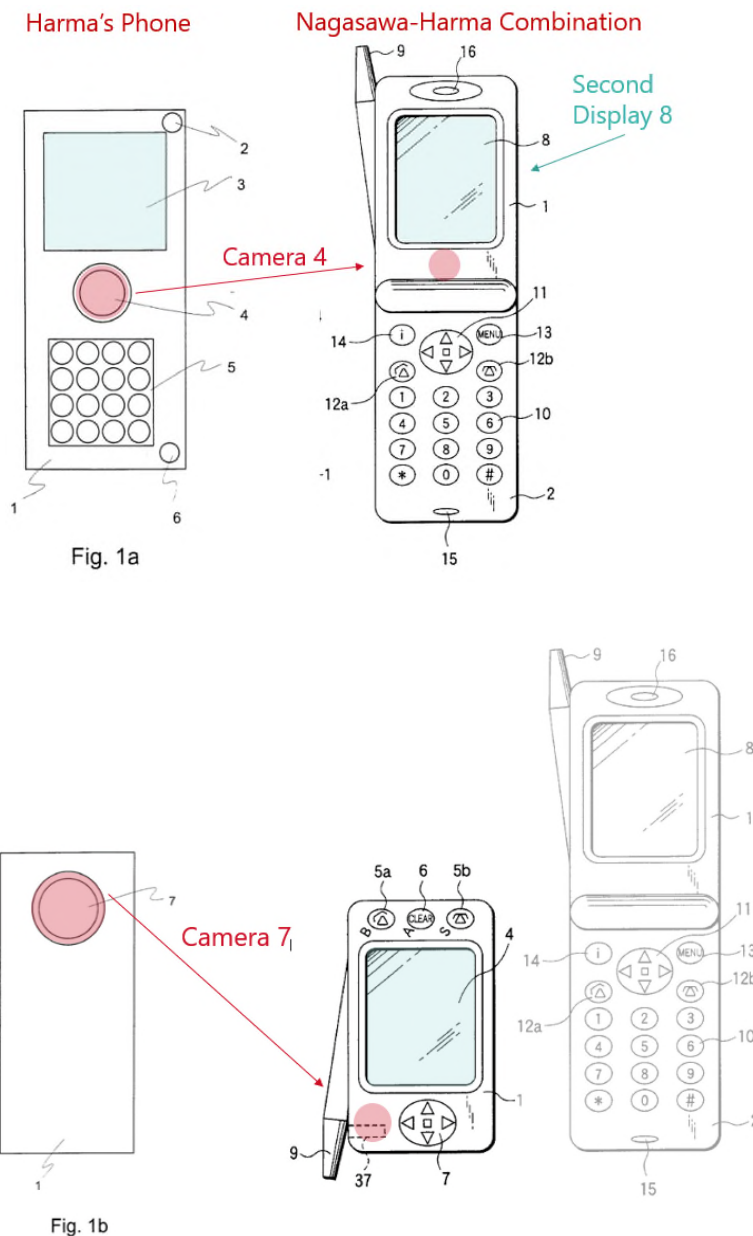
175. For example, a POSITA would have known that the camera features implemented on *Harma*'s mobile phones could easily be implemented on *Nagasawa*'s foldable portable telephone. The POSITA was already familiar with how to implement multiple cameras of a folding telephone, as evidenced by the success of others in doing so. EX1019, [0001] (describing using “multiple cameras in the same housing” of a foldable phone that communicates “audio and video data”),

[0014] (explaining that a “liquid crystal display” may display “video images captured by” a “first camera 303” and a “second camera 308”), Figs. 1-2 (illustrating “first camera 303” and “second camera 308” on opposite sides of foldable phone), Fig. 12 (illustrating display of images from multiple cameras on display). 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 in a foldable form factor. *See, e.g.,* EX1019. This would have taken no more than basic skill in electrical and mechanical engineering which would have been well within the skill of a POSITA. Moreover, it was well known that cameras existed that could easily fit within the form factor of a foldable telephone of the type taught by *Nagasawa*. EX1019, [0010]-[0012], Figs 1-2. A POSITA would have expected success in adding cameras to the flip phone of *Nagasawa*, and specifically, to put the cameras on opposite sides of the device as taught by *Harma*. This positioning is consistent with how the POSITA had already placed opposing cameras in similar foldable telephones. *See* EX1019, Figs. 1-2 (placing “camera 303” on the opposite side of “camera 308”). The success others had already achieved in adding cameras to flip phones would have motivated the POSITA to have an expectation of success in combining the cameras of *Harma* with the foldable portable telephone of *Nagasawa*.

**(3) A POSITA Would Have Achieved the
Combination with Predictable Results.**

176. A POSITA would have achieved the combination of *Nagasawa* and *Harma* with predictable results. For example, *Harma* teaches “a display with a given display direction” that is “the same as the capturing direction of the first camera.” EX1008, 2:4-8, Figs. 2-3, 5a, 5b. *Harma* further teaches this camera that captures the image of the user, while the other should capture images facing away from the user. See EX1008, Figs. 5, 5:7-13. *Harma* further teaches that the second camera should face opposite to the first camera. *Id.* *Harma* also states that its second camera captures images or video of the scene a user is viewing. EX1008, 1:25-2:3, Figs. 2-3.

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



178. The obvious addition of camera 4 from *Harma* is consistent with *Nagasawa*'s own teaching with respect to adding a camera, which is 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). EX1007, 7:37-40.¹⁵ A POSITA would have been motivated to place *camera 4* on the inside of the upper clamshell in *Nagasawa*'s flip phone. *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. 2-3. A POSITA would know from this teaching to place the first camera on the inside of *Nagasawa*'s phone to face the user when the flip phone is open.

179. With respect to camera 7 from *Harma*, the POSITA would have understood that the placement annotated above would result in the camera being oriented in an analogous location to *Harma* when the foldable telephone of *Nagasawa* is in an opened position. A POSITA adding *Harma*'s camera 7 to *Nagasawa*'s foldable portable telephone would be expressly motivated to place *Harma*'s second camera 7 on the outer surface of *Nagasawa*'s case body 1. *Harma* teaches that its second camera has a "narrower angle of view" and a longer focal length for producing a "sharp image while capturing from an essentially longer

¹⁵ As discussed above, a POSITA would have known to implement the camera of *Nagasawa*'s fifth embodiment in Figure 12B with *Nagasawa*'s third embodiment in Figure 11.

distance than the first camera,” which provides better imaging of scenery in the direction that the user of the phone is looking. See EX1008, 2:31-35, 4:36-5:4, Figs. 2-3.

180. A POSITA would know from this teaching to place the second camera 7 on the outside of *Nagasawa*’s phone to face the direction the user is looking when the foldable telephone was in the unfolded position illustrated by Figure 11C. 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 that this would have been a desirable position from which to use the second camera to take longer shots of scenery according to the teachings of *Harma*.

181. The POSITA would have been further motivated to place the cameras as shown above because it was commonly understood that foldable telephone users hold their phones in the unfolded position at the bottom of the device. Indeed, this holding arrangement is expressly taught in embodiments of *Nagasawa*. See, e.g., EX1007, Fig. 5B. The POSITA would have understood that placing the cameras in the top case body of *Nagasawa*’s device would have prevented the cameras from being obscured by the user’s hand when being held as illustrated in *Nagasawa*’s Figure 5B.

182. Accordingly, a POSITA would have achieved the predictable results of achieving the base system of *Nagasawa* with the added benefit of a camera on each

side of the upper portion of the foldable portable telephone. A POSITA adding the cameras of *Harma* to *Nagasawa*'s phone would predictably use those cameras to achieve a split-screen view. See EX1008, Fig. 3, 5:7-14. The predictable result of combining *Harma* with *Nagasawa* is further confirmed by the success of others to add dual cameras to flip phones, who had already placed the cameras in similar locations on opposing sides of the upper clamshell of the device. EX1019, Figs. 1-2.

2. Claim 18

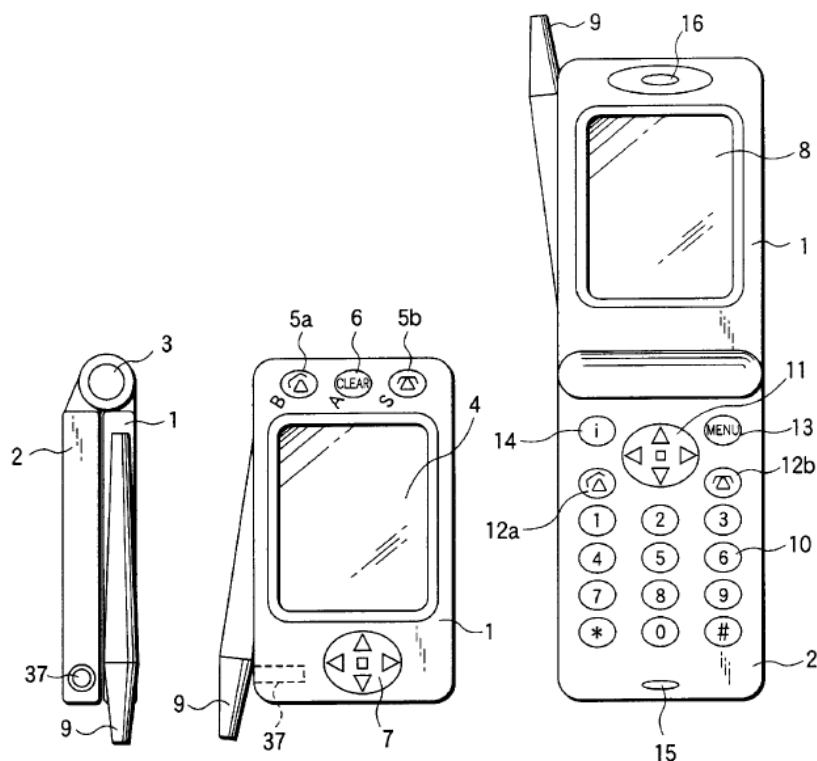
- a. Claim 18[p]: “A communication service device operable with a communication network, comprising:”

183. The *Nagasawa-Harma* combination discloses a communication service device operable with a communication network. *Nagasawa* discloses a foldable portable telephone is a “communication service device,” which is operable with a radio cellular network, which is a type of “communication network.” EX1007, 1:29-44, 4:61-5:10, Figs. 5-6, 11. Similarly as discussed in Ground 3, the POSITA would have understood that the telephone disclosed by *Nagasawa* is a mobile phone compatible with a radio communication network. See, e.g., EX1015; EX1016.

FIG.11A

FIG.11B

FIG.11C



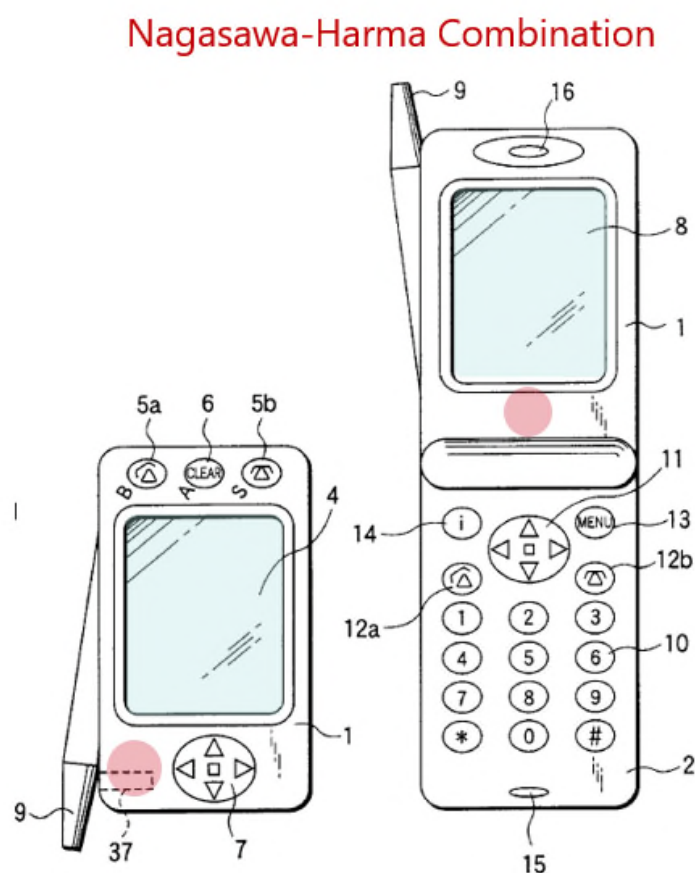
184. *Nagasawa*'s foldable portable telephone includes a "folding main body, an antenna, radio communications means, controller, storage means, folding/unfolding state detector, display, operation means, a transmitter and a receiver." EX1007, at 1:29-33. It further includes a "first display 4" on "the outer surface of the first case body 1," and a "second display 8" on the "inner surface of the first case body." EX1007, at 3:49-55, 3:66-4:1. A POSITA would have understood that *Nagasawa*'s embodiments could be used together, as *Nagasawa* Figures 11A -11C ("third embodiment") rely on the description of Figure 1 ("first embodiment"), and the numbered elements of the figures relied on herein are the

same. *See* EX1007, at 7:5-8. At a minimum, the POSITA would have found it obvious to use the descriptions of the various figures to arrive at a combined device.

185. *Nagasawa* teaches that the “radio communications means” relates to the folding portable telephone’s “radio communications feature.” EX1007, 1:5-9, 1:29-35. *Nagasawa* further discloses that embodiments of its portable telephone include internal components such as a “radio communications section,” which would obviously be included in various embodiments of *Nagasawa*’s foldable portable telephone, including that of Figures 11A -11C shown above. *Id.* at Fig. 6, 4:61-5:3. The POSITA would have understood these radio components to be describing ubiquitous and well-known components that were prevalent in mobile phones of the time. Such radio components were well known to make the telephone operate on a radio communication network. EX1015; EX1016.

186. *Harma* discloses that the “invention relates to **a mobile phone** comprising a camera.” EX1008, 1:1-6. *Harma* also discloses that a mobile phone includes “radio transmitter/receiver 20 also functions as in known mobile phones.” EX1008, 5:24-30. It was commonly understood by POSITAs that mobile phones including the radio components described by *Nagasawa* and *Harma* were for cellular communication service and were operable with radio cellular networks. *See supra* §§ X.B.1.a, IX.

187. A POSITA would have been motivated to modify *Nagasawa*'s foldable portable telephone to include the camera features in *Harma*'s mobile phone for the reasons I discussed in Section X.C.1. *Nagasawa*'s foldable portable telephone as modified according to the teachings of *Harma* is illustrated below (Figures 11A and 11B from *Nagasawa* highlighted to illustrate the displays in blue and the obvious additions of *Harma*'s opposing cameras in red).



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

b. **Claim 18[a]: “at least one user communication device configured to receive and transmit information over the communication network;”**

189. See 18[p]. The *Nagasawa-Harma* combination comprises a foldable portable telephone, which is a user communication device configured to receive and transmit information over a communication network. For example, *Nagasawa*’s foldable portable 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, at 4:61-5:15; see also *supra* § X.B.1.b.

190. I note that Patent Owner’s infringement contentions interpret the claimed “communication service device” of 18[p] and the “user communication device” of 18[a] as descriptions of the same device, and I rely on that interpretation in the instant declaration. EX1009, at pp.2, 8-9.

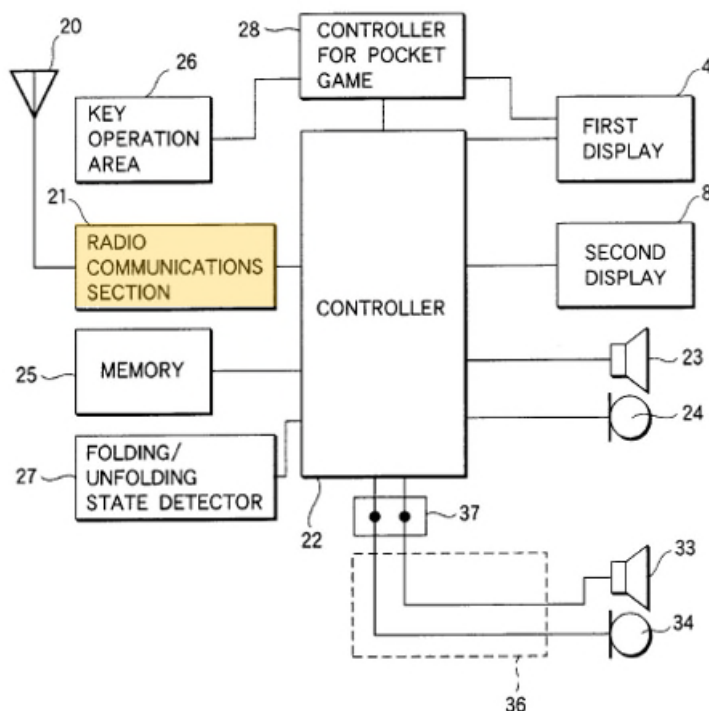
191. *Nagasawa* discloses an embodiment of the disclosed foldable portable telephone that includes a radio communications section 21 (shown below in orange), which enables the telephone to transmit and receive information over the radio. EX1007, Fig. 6, 4:61-5:15.¹⁶ The POSITA would have recognized that various

¹⁶ A POSITA would also have known that *Nagasawa* Figure 6, which describes functional components and interfaces in a folding portable telephone, was operable

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 one in Figures 11A and 11B. At a minimum, it would have been obvious to include the components described in Figure 6 in the embodiment of Figures 11A to 11C of *Nagasawa*. Indeed, a POSITA would have understood that such radio components should be included in the embodiments of *Nagasawa*'s telephone in order for the device to function as a portable telephone.

with the mobile phone embodiments of *Nagasawa*'s telephones, such as those described in Figures 1-2, 5, 11, and 12, which describe common elements of a mobile phone. Moreover, a POSITA would have found it obvious to implement the elements of *Nagasawa* Figure 6 in the telephones *Nagasawa* describes in Figures 1-2, 5, 11, and 12.

FIG.6



192. *Nagasawa* discloses its folding portable telephone receiving information in the form of “radio waves coming from an antenna 20 [that] are received by the receiver (not shown) of a radio communications section 21 and received information is transferred to a controller 22. The controller 22 displays the *received information* . . .” EX1007, 4:61-66. Further, “controller 22 converts *received information* to voice information and outputs the voice information from a receiver (speaker) 23.” *Id.* at 5:4-6. “The transmitter (microphone) 24 transfers the user’s voice to the controller 22 and *transmits the information* to the distant party via a transmitter (not shown) of the radio communications section 21 and the antenna 20.” *Id.* at 5:6-11.

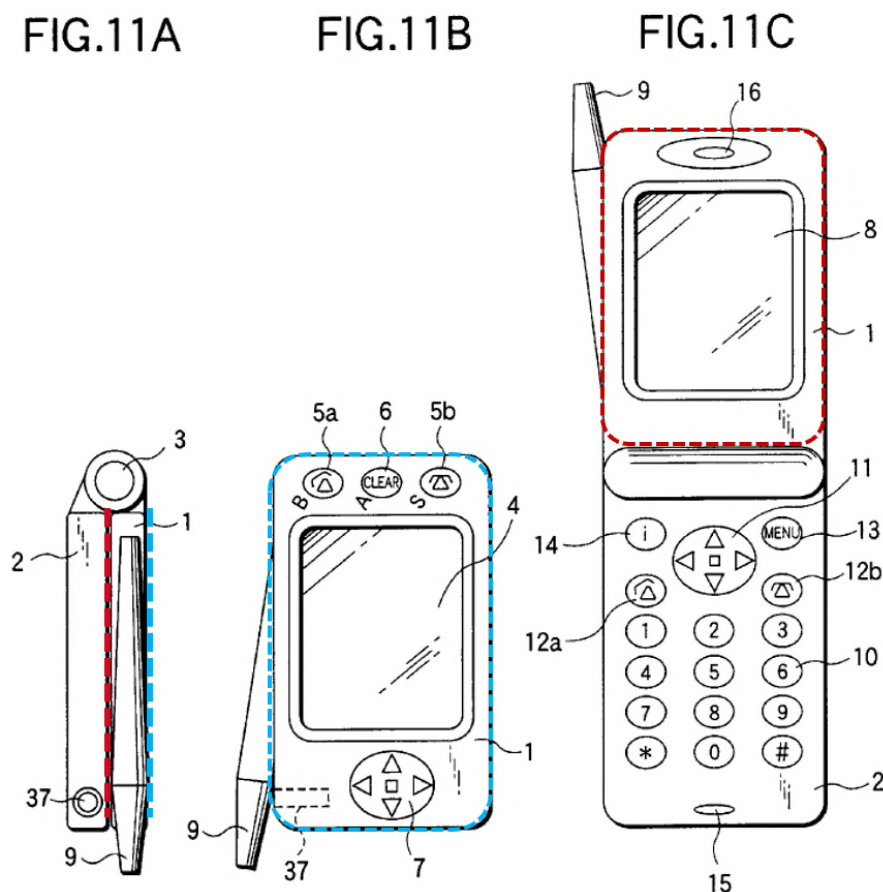
193. *Harma* discloses that its phone contains a radio transmitter/receiver 20 that “functions as in known mobile phones.” EX1008, at 5:29-30. *Harma* further suggests that mobile phone can be used for “video conferencing.” *Id.* at 1:4-5 (“More and more often mobile phones include a camera that enables capturing still pictures and video clips, as well as their use in video conferences”). Likewise, *Nagasawa* suggests the use of a camera and a video conferencing display. EX1007, at 7:37-40. Video conferencing is another form of communication that involves receiving and transmitting information over a communication network. As I have previously discussed it would have been obvious to a POSITA to implement the disclosed videoconferencing embodiment via a communication network formed 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”); see EX1017, pp. 140-44. It would have been equally as obvious to the POSITA to utilize the radio components taught by *Nagasawa* to achieve video conferencing in a combined device.

194. The POSITA would have found it obvious to include two cameras and video conferencing capabilities in the combined *Nagasawa-Harma* phone for the reasons discussed in Section X.C.1, further rendering the obviousness of the claimed device transmitting and receiving information over a communication network via video conference. See, e.g., 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 video conferencing 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 video calling).

c. **Claim 18[b]: “the at least one user communication device comprising a housing having a first side and a second side,”**

195. The *Nagasawa-Harma* combination discloses this limitation. Specifically, *Nagasawa*’s foldable portable 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 through 11C in multiple views, with Figs. 11A and 11B showing two views of the telephone in a folded position and Fig. 11C showing the phone in an unfolded position. See EX1007, Figs. 11A-11C. These figures have been reproduced below and color annotated to highlight the **first side** and **second side** of first case body 1.



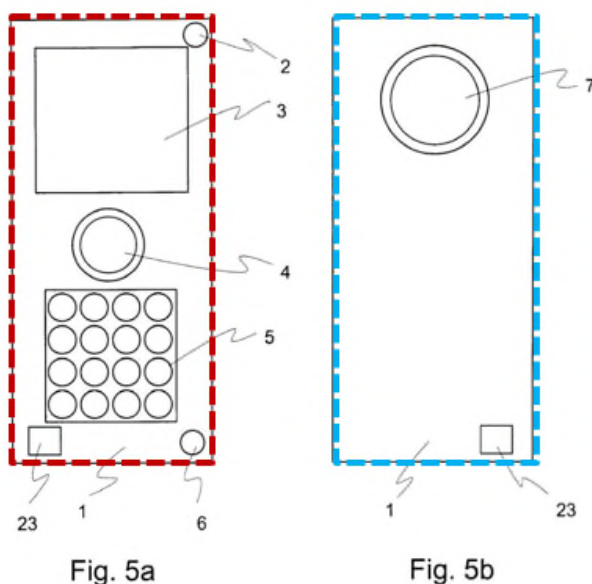
196. First case body 1 is the housing of the telephone highlighted in red and blue, above, and it contains the outer display 4 shown in Figure 11B and the inner display 8 shown in Figure 11C. As described by *Nagasawa*, a “first case body 1 and a second case body 2 are coupled via a hinge 3 so that the first case body 1 and the second case body 2 can be folded or unfolded via the hinge 3.” EX1007, at 3:51-54.

197. I note that although this passage is describing *Nagasawa*’s first embodiment of Figures 1 and 2, *Nagasawa* explains that the only difference between the first embodiment and the third embodiment of Figures 11A-11C is the location

of antenna 9. *See* EX1007, 7:5-8. The description of Figures 1 and 2 is thus applicable to Figures 11A-11C.

198. *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.* at 3:54-55. Similarly, *Nagasawa* refers to the first side of first case body 1 as the “inner surface of the first case body 1.” *Id.* at 3:66-67. Based on this description in view of the figures, the POSITA would have understood that unfolding the telephone from the position shown in Figs. 11A and 11B would result in the position shown in Fig. 11C, and that **second side** shown in Fig. 11B would be flipped and on the opposite side (*i.e.*, the side facing into the page) as the **first side** shown in Fig. 11C. 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.

199. *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* ¶149 (explaining that a POSITA would have known to combine *Harma*’s embodiments). *Harma* illustrates the front side and back side of the mobile phone in Figures 5a and 5b (annotated below to highlight the first side and second side):



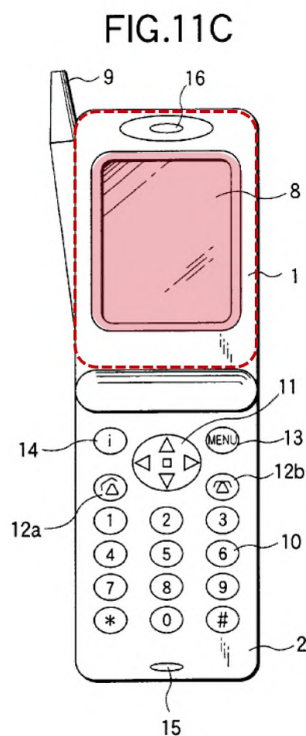
200. As described by *Harma*, “Figure 5a is a schematical illustration of a mobile phone 1 . . . seen at the front. On the **front side** of the mobile phone, **i.e. on the side that faces the user while operating**, there is a loudspeaker 2, a display 3, a first camera 4, a keypad 5, a microphone 6 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.

201. The POSITA would have found it obvious to combine the cameras of the first and second side of *Harma* with the first and second side of *Nagasawa*, for the reasons explained above in Section X.C.1. *See supra* § X.C.1.

- d. **Claim 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.”**

202. 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, 3:53-55, 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. 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* § X.C.1.

203. *Nagasawa* illustrates **display 8** of its **first side** in Fig. 11C, which is highlighted in red below:



204. *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”), 7:33-40. For example, *Nagasawa* describes “[v]ideo conference

display.” EX1007, 7:33-40 (“Video conference display may be provided ...”).¹⁷ A POSITA would have understood that any display of *Nagasawa* could provide for “video conference display,” gaming, or other visual information, particularly in light of *Harma*’s teaching to use displays for video. EX1008, 1:4-5, 1:21-23, 2:19-23, Fig. 3. Similarly, a POSITA would have understood that display 8 could display the same information as display 4, or vice versa. 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).

205. Moreover, a POSITA could have readily configured and/or modified to display *Nagasawa*’s displays to display any number of images in addition to telephone numbers. *See, e.g.*, EX1010, 16:21-23 (describing motivation to access “text and graphics” in a folded state); EX1019, [0034], 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*. EX1007, Abstract (disclosing “liquid crystal display ... on the outer surface” of the foldable phone), 1:16-20 (disclosing “liquid crystal display” on the

¹⁷ As explained above, a POSITA would have known to implement teachings of *Nagasawa*’s Figures 1-2, 6, 11, and 12 together.

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

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

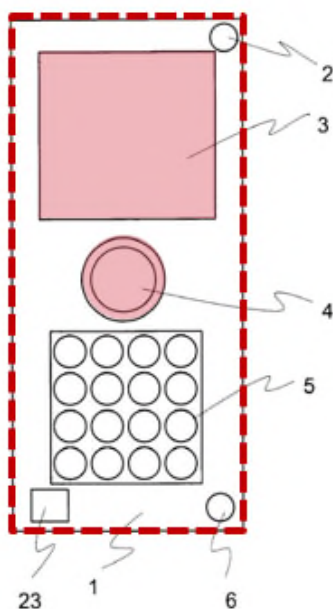


Fig. 5a

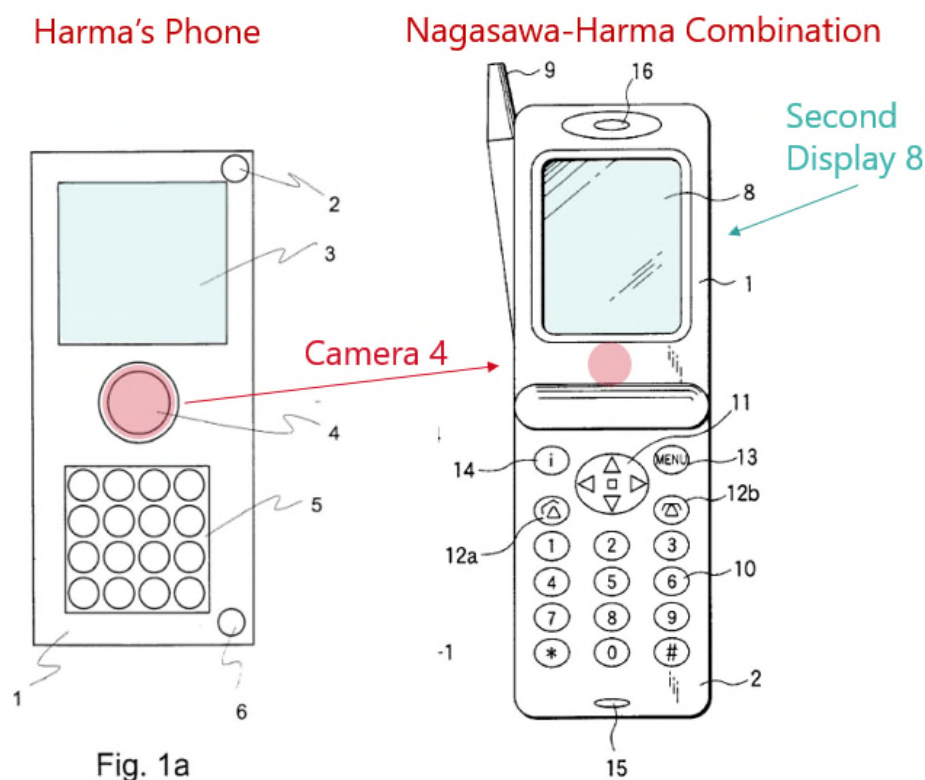
207. As explained by *Harma*, “Figure 5a is a schematical illustration of a mobile phone 1 . . . seen at the front. On the **front side** of the mobile phone, i.e. on the side that faces the user while operating, there is a loudspeaker 2, a **display 3**, a **first camera 4**. . . . Obviously the first 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. The rest of the elements can

likewise be arranged in some other order than the one illustrated in the drawing.”
EX1008, at 6:4-11.

208. *Harma* further explains that a user may input and output visual information via **display 3** and **camera 4**. EX1008, 5:7-23, Figs. 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, 4:32-5:6 (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 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.¹⁸

¹⁸ As explained above, a POSITA would have understood to implement the embodiments of *Harma* Figures 1-5 together. A POSITA would also have known to combine *Harma* Figure 4, which describes functional components and interfaces in *Harma*’s mobile phone, with the mobile phone embodiments of *Harma* Figures 1-2 and 5, which describe common elements of a mobile phone.

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



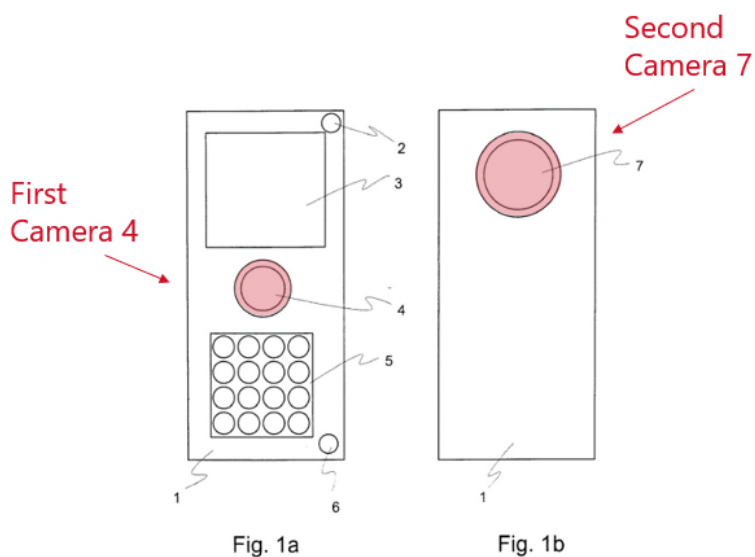
210. The *Nagasawa-Harma* combination includes a first input device (camera 4) and first display device (display 8) configured to allow the user to input and output visual information (for example, to display images captured by camera 4 on display 8 as taught by *Harma*) wherein the at least one first 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).

- e. **Claim 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;”**

211. See 18[c]. 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, 5:7-23, Fig. 3, 4:32-5:6, 5:9-13, 5:31-35, 6:4-11, Figs. 2, 4, 5a, 5b.

212. *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. There is further illustrated an optical viewfinder 23.”).

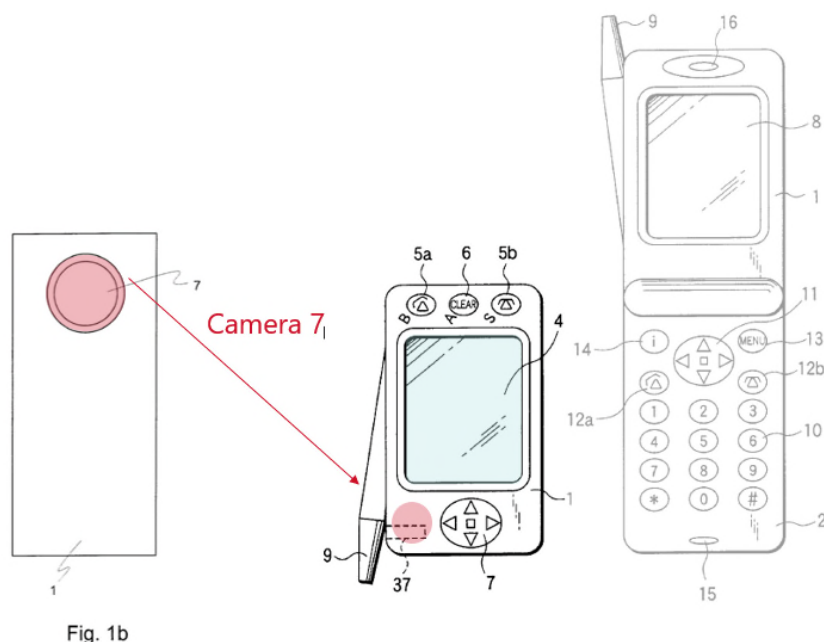
213. *Harma*’s second camera 7 is “configured to input visual information,” as claimed, because the user may use second camera 7 to capture images or video. EX1008, 4:36-5:4, Fig. 2.

214. *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, 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 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.¹⁹

215. As discussed above in Section X.C.1, it would have been obvious to modify *Nagasawa* to include the first and second cameras described by *Harma*. See *supra* § X.C.1. 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*. See *supra* § X.C.1. This modification is illustrated below:

¹⁹ As explained above, a POSITA would have understood to implement the embodiments of *Harma* Figures 1-5 together. A POSITA would also have known to combine *Harma* Figure 4, which describes functional components and interfaces in *Harma*’s mobile phone, with the mobile phone embodiments of *Harma* Figures 1-3 and 5, which describe common elements of a mobile phone and use cases for the mobile phone.



216. 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 8 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).

- f. **Claim 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.”**

217. See 18[c]-18[d]. The *Nagasawa-Harma* combination discloses these limitations at least under Patent Owner’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* § X.A.1.f(2), above (explaining Patent Owner’s interpretation of these limitations). Applying Patent Owner’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, Fig. 3, 4:32-5:6, 5:9-13, 5:31-35, 6:4-11, Figs. 2, 4, 5a, 5b.

218. *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, 5:9-13 (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 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, 3a, 4, 5a, 5b.

219. *Harma* illustrates how both cameras may be “accessed” by a user 8 to view a split screen of the images captured by the first and second cameras:

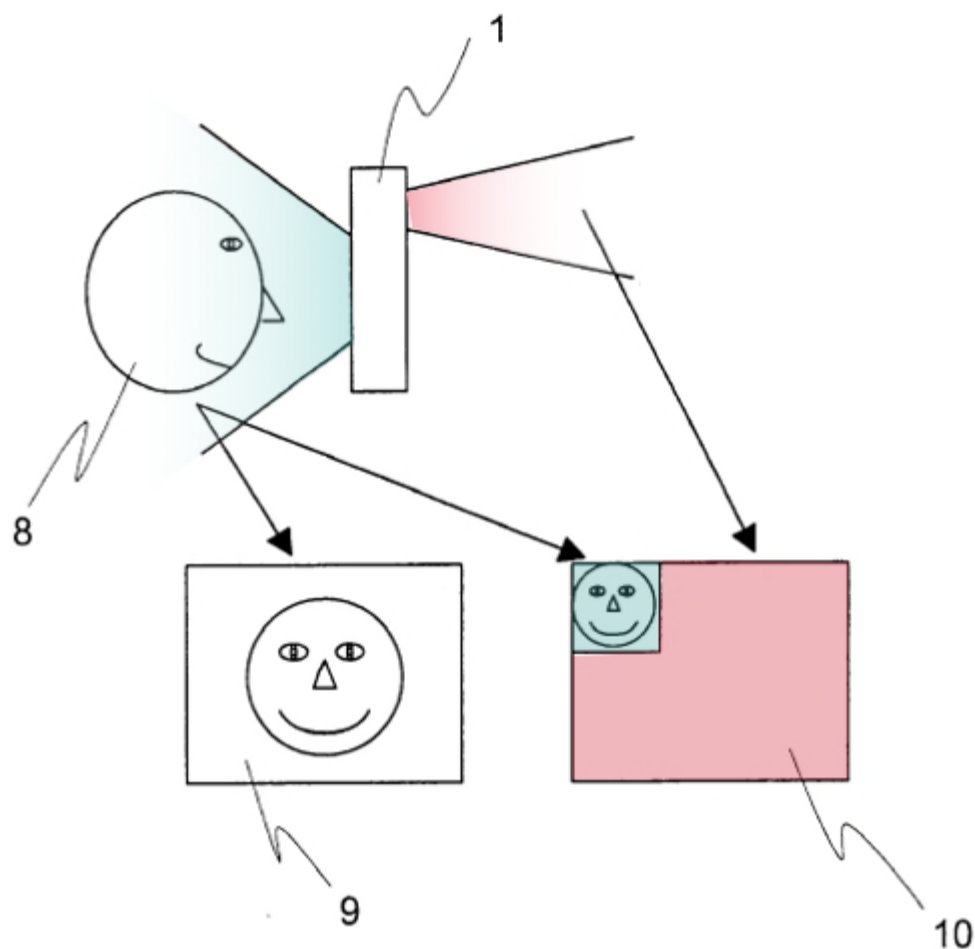


Fig. 3a

220. 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 Patent Owner’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.”

221. As discussed above in Section X.C.1, 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 portable telephone. *See supra* § X.C.1. For example, the POSITA would have had ample reason to combine *Harma* with *Nagasawa* such that the first and second cameras of the mobile phone of *Harma* are oriented to permit the same perspective shots and split-screen views shown in Figure 3 of *Harma*. This would have been the natural result of the POSITA placing the cameras as discussed above with respect to elements 18[c] and 18[d] in *Nagasawa*’s foldable phone.

3. Claim 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.”

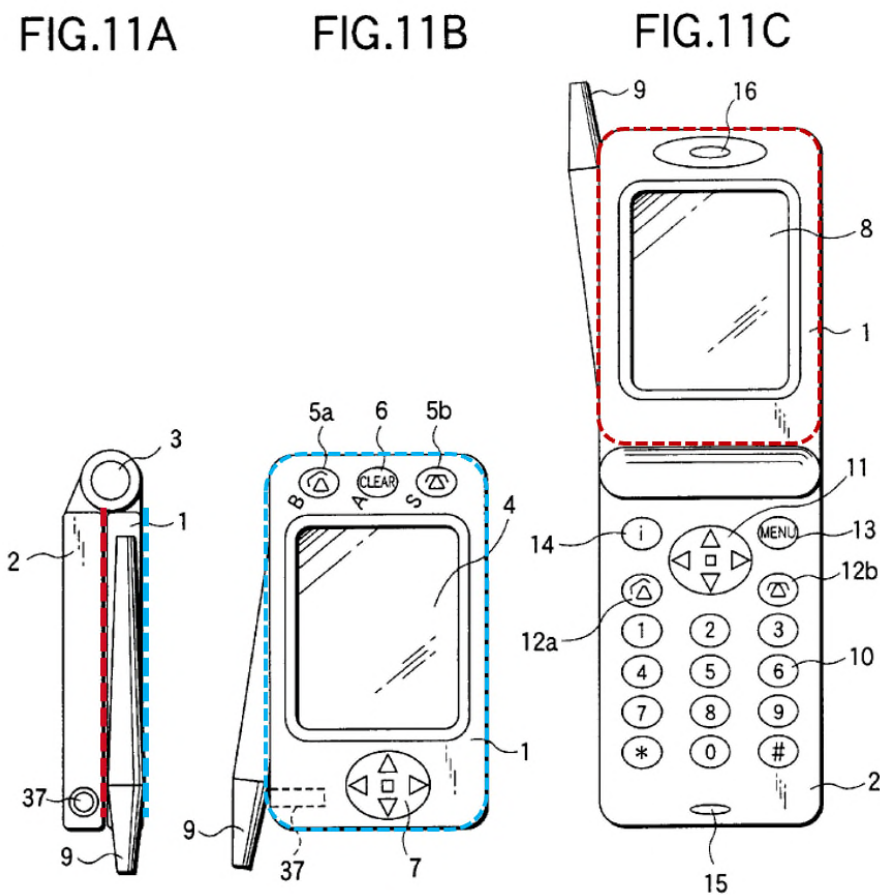
222. *See* 18[b]-18[e]. The *Nagasawa-Harma* combination discloses these limitations. As shown in element 18[b], the first side of first case body 1 and the second side of first case body 1 face mutually opposite directions.

4. Claim 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.”

223. See claim elements 18[c]-18[e]. As explained above, the claimed input devices of Claim 18 may be cameras.

5. Claim 21: “The communication services device as claimed in claim 19 includes, a second display device residing on the second side of the housing.”

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



225. As explained by *Nagasawa*, “first display 4 comprising a liquid crystal display is provided on the outer surface of the first case body” (second side) while there is “second display 8” is provided on “the inner surface of the first case body.” EX1007, at 3:53-55, 3:66-4:1.

XI. SECONDARY CONSIDERATIONS

226. I am not aware of any secondary indicia applicable to the claimed invention. However, should the Patent Owner put forth any alleged evidence of secondary considerations in this proceeding or the related litigation, I reserve the right to consider such evidence, to consider whether any such evidence has a nexus to any claims of the Challenged Patent, and to update my analysis.

XII. CONCLUSION

227. In my opinion the '168 Patent does not claim a novel or non-obvious invention. For all the reasons explained above, the prior art anticipates or renders obvious the Challenged Claims.

XIII. DECLARATION

228. I hereby declare that all the statements made in this Declaration are of my own knowledge and true; that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or

DECLARATION OF SANDEEP CHATTERJEE
IN SUPPORT OF PETITION FOR INTER PARTES REVIEW
OF U.S. PATENT NO. 10,499,168

imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Executed in Atherton, California on November 5, 2024.



Sandeep Chatterjee