

UNITED STATES PATENT AND TRADEMAKR OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

**HANSHOW AMERICA INC. and
HANSHOW TECHNOLOGY CO., LTD.**

v.

SES-IMAGOTAG GMBH

IPR2024-00188

Petitioner Hanshow's Demonstratives

February 18, 2025

Demonstrative Exhibit – Not Evidence

ROADMAP

Alleged Invention

Claim Construction

Instituted Grounds

Ground 1 - Swafford, Masumoto

Ground 2 - Masumoto, Kipp, Takashi

Expert Qualification

U.S. Patent No. 11,405,669

(10) Patent No.: **US 11,405,669 B2**
(45) Date of Patent: **Aug. 2, 2022**

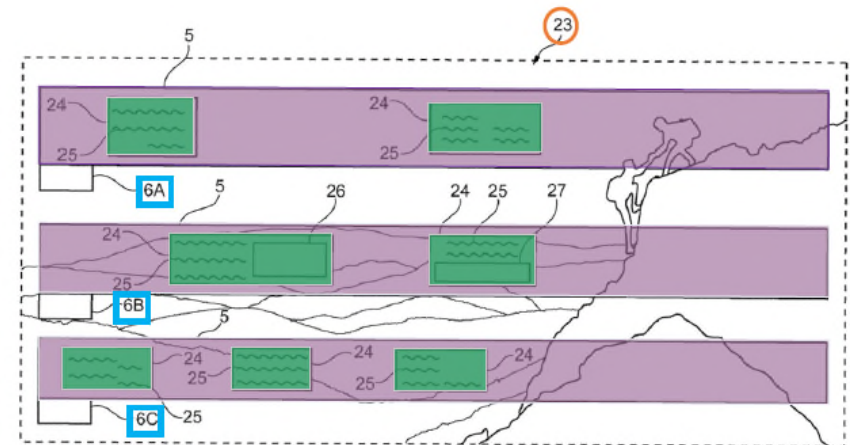
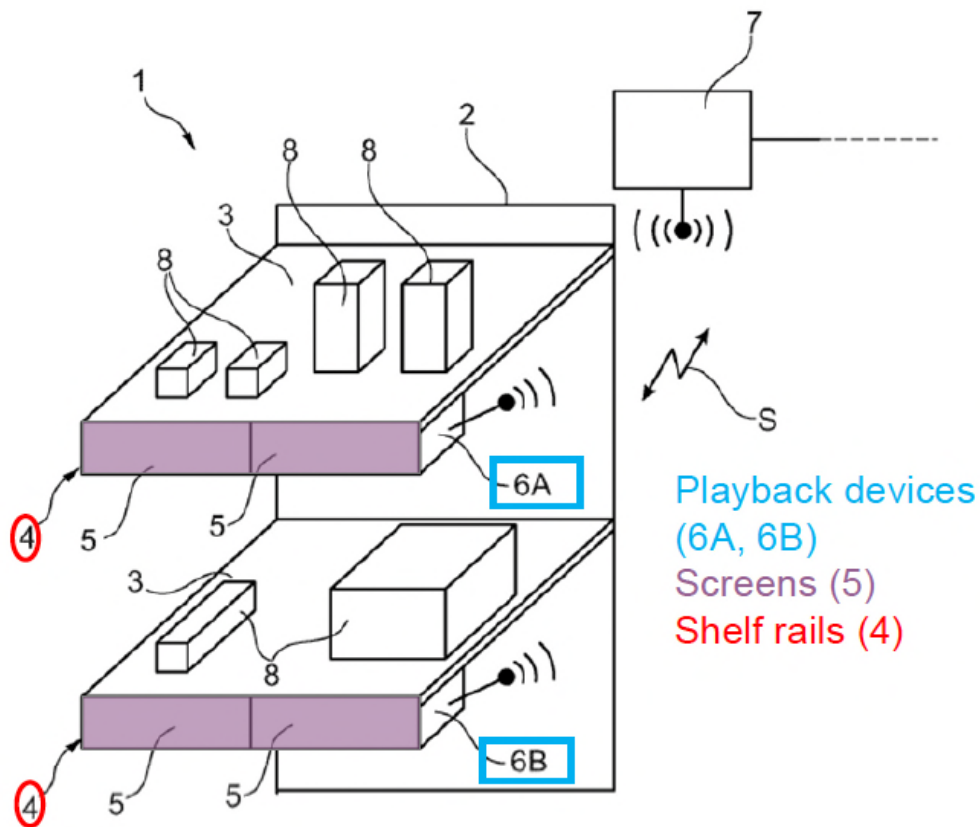
(54) **SYSTEM FOR SYNCHRONIZED VIDEO
PLAYBACK ON A NUMBER OF PLAYBACK
DEVICES**

(22) PCT Filed: **Nov. 10, 2017**

(86) PCT No.: **PCT/EP2017/078844**

§ 371 (c)(1),
(2) Date: **May 8, 2020**

Overview of the '669 Patent



Video (23)
 Playback devices (6A, 6B, 6C)
 Electronic shelf label content (of virtual electronic shelf labels) (24)

Claim 1 of the '669 Patent

1. A video playback system (1), comprising a number of playback devices (6A, 6B) to playback a video on their screens (5), each playback device (6A, 6B) comprises a memory to store video data (9) representing said video, and a communication stage to communicate data with each other, wherein the devices (6A, 6B) are designed:

- to transmit video playback progress-data via the communication stage to the other device (6B, 6A); and,
- to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other devices (6B, 6A);

wherein the display devices (6A, 6B) are designed to display product information or product price related information by means of virtual electronic shelf labels displayed within a section of a screen's (5) display area overlapping with a video content or substituting a video content of said section.

ROADMAP

Alleged Invention

Claim Construction

Instituted Grounds

Ground 1 - Swafford, Masumoto

Ground 2 - Masumoto, Kipp, Takashi

Expert Qualification

Claim Construction

“designed to”

“communication stage to
communicate data with each
other”

Claim Construction - “designed to”

The parties may wish to address whether the proper scope of the claim does not require either transmission or determination but rather requires that the playback devices be *designed to* transmit and determine.

1. A video playback system (1), comprising a number of playback devices (6A, 6B) to playback a video on their screens (5), each playback device (6A, 6B) comprises a memory to store video data (9) representing said video, and a communication stage to communicate data with each other, wherein the devices (6A, 6B) are designed:

to transmit video playback progress-data via the communication stage to the other device (6B, 6A); and,

to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other devices (6B, 6A);

wherein the display devices (6A, 6B) are designed to display product information or product price related information by means of virtual electronic shelf labels displayed within a section of a screen's (5) display area overlapping with a video content or substituting a video content of said section.

PO's Construction

each device be expressly configured to transmit and determine *during the operation of the system*.

Petitioner's Construction

should be accorded its *plain meaning*, which does not require actual transmission or determination, but rather requires that the playback devices be “designed to” or “configured to” accomplish that function.

Federal Circuit Equated “Designed to” with “Configured to”



In re Man Mach. Interface Techs. LLC, 822 F.3d 1282, 1286 (Fed. Cir. 2016)

"We have noted that the phrase 'adapted to' generally means 'made to,' '**designed to,**' or '**configured to.**'"



In re Giannelli, 739 F.3d 1375, 1379 (Fed. Cir. 2014)

"[T]he phrase 'adapted to' is frequently used to mean 'made to,' '**designed to,**' or '**configured to,**' ..."

Federal Circuit Construed that “configured to” does not “require that such communication actually occurs”

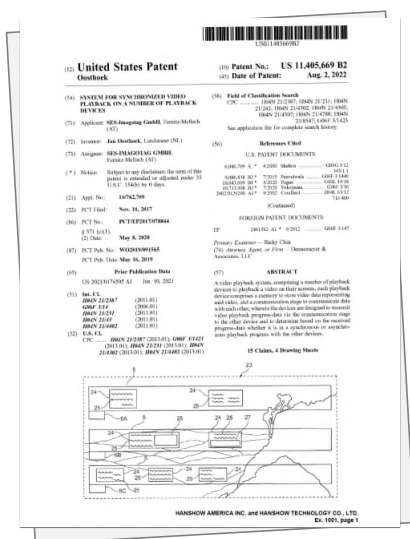


Rothschild Connected Devices Innovations, LLC v. Coca-Cola Co., 813 F. Appx 557, 563-64 (Fed. Cir. 2020)

"Nor does claim 11 require that such communication actually occurs. All the claim requires is that the user interface module be '**configured to**' receive the user and beverage identifiers."

PO's Construction Improperly Introduces Limitations *Because* the Claim Contains NO Such Requirements

- Claims 5-10 and 12 recite “each device,” thus “the devices” in claim 1 was an intentional choice.
- PO's construction would render claim 7 and other claims redundant.



7. The system (1) according to claim 1, wherein each device is designed to broadcast adjustment data for adjusting the playback progress of the devices (6A, 6B) over its communication stage if it detects an asynchronous playback progress.

each device be expressly configured to broadcast during the operation of the system.

PO's Construction Improperly Introduces Limitations *Because* the Specification Does NOT Support PO's Construction

- *Aspex* find[s] that “‘adapted to’ was intended to have a different meaning from ‘capable of.’”
- The '669 uses “designed to” throughout without distinguishing it from “capable of.”



Aspex Eyewear, Inc. v. Marchon Eyewear, Inc., 672 F.3d 1335, 1349 (Fed. Cir. 2012)

“The fact that the two adjacent claims use different terms in parallel settings supports the district court's conclusion that the two terms were not meant to have the same meaning and thus that **“adapted to” was intended to have a different meaning from “capable of.”**”

- Both *In re Giannelli* and *In re Man Mach.* find structural attributes/structure and positional relationship in specification.
- **No structural information or positional relationship** of the playback devices is disclosed in the '669.



In re Giannelli, 739 F.3d 1375, 1379 (Fed. Cir. 2014)

“Although the phrase can also mean ‘capable of’ or ‘suitable for,’ ‘id., here the written description makes clear that ‘adapted to,’ as used in the '261 application, has a narrower meaning, viz., that the claimed machine is designed or constructed to be used as a rowing machine whereby a pulling force is exerted on the handles. The written description of the '261 application describes how the position of the handles relative to the primary and secondary lever arms and the resistance mechanism renders them ‘adapted’ to be moved by the user's pulling force.”



In re Man Mach. Interface Techs. LLC, 822 F.3d 1282, 1286 (Fed. Cir. 2016)

“[T]hough it can also be used more broadly to mean ‘capable of’ or ‘suitable for.’...Here, ‘adapted to,’ as used in the '614 claims and specification, has the narrower meaning, viz., that the claimed remote control device is made or designed to be held in the human hand and the thumb switch is made or designed for activation by a human thumb. The '614 specification describes how the body of the remote control device is preferably elongated and rounded to be held in the hand...”

PO's Construction Improperly Introduces Limitations *Because* PO Did NOT Discuss “designed to” During Prosecution

- Applicant only argued for an additional bidirectional or reciprocal relationship to distinguish from reference *Asami*.
- The Examiner's construction of “designed to” during prosecution comports with Petitioner's proposal.

PO Response

During prosecution, Applicant's arguments underscored the required reciprocal nature of the communication during operation between playback devices so that each device **can** independently make its own synchronicity determination. Hart, ¶69.

Applicant's Argument

(emphasis added). In other words, in contrast to the present independent claim 1, wherein different ones of the of playback devices communicate with each other bidirectionally, thereby enabling independent detection of an asynchronous playback progress within the group of playback devices, in *Asami*, different ones of the first playback devices 10 **can only** detect an asynchronous playback progress dependent from the second playback device 20 (emphasis added). Descriptively speaking, the playback devices of *Asami*

Examiner's Rejection

device that the device is in standby with the decoder started, whereby the progress data **is construed to be** that of the management device having the content and **able to** send the data and the reproduction device sending the standby state telling the management device that it is ready to receive the data).

PO Reads Order of Reference Numbers as Limiting and Limits Claim 1 to Two Playback Devices 6A, 6B



MPEP, §608.01(m) (9th ed., 2019)

"Generally, the **presence** or **absence** of such reference characters does not affect the scope of a claim."

a communication stage to communicate data with each other, wherein the devices (6A, 6B) are designed: to transmit video playback progress-data via the communication stage to the other device (6B, 6A); and,

Ex. 1001, Claim 1 (annotated by SES)
Paper 23 (POR), 24

72. Claim element 1.3 requires:

a playback device (6A) designed: transmit video playback progress-data via the communication stage to the other device (6B, 6A), and to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other device 6B.

AND

a playback device (6B) designed: transmit video playback progress-data via the communication stage to the other device (6B, 6A), and to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other device 6A. *Ex. 2004 (Hart Report), 72*

- Exception does not apply – 6A/6B are not well-known term with an understood meaning.

Q: So you consider [] the order of the reference numbers are important [] for a POSITA to understand the claim scope, right?

A: I understood that, and a person of ordinary skill in the art would understand that.

Ex. 1014 (Hart Depo. Tr.), 71:8-14

PO Reads Order of Reference Numbers as Limiting and Limits Claim 1 to Two Playback Devices 6A, 6B

PO has to modify “**the other devices**” to “*the other device*” to fit his argument, which essentially limits the system to include only two devices.

[1.3], *without reference numbers*, recites:

wherein **the devices** [] are designed:

to transmit video playback progress-data via the communication stage to **the other device** []; and,

to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with **the other devices** [].

72. Claim element 1.3 requires:

a playback device (6A) designed: transmit video playback progress-data via the communication stage to the other device (6B, 6A), and to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other device 6B,

AND

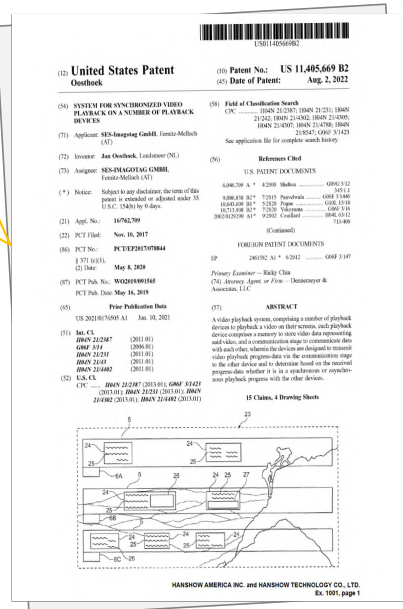
a playback device (6B) designed: transmit video playback progress-data via the communication stage to the other device (6B, 6A), and to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other device 6A.

Ex. 2004 (Hart Report), 72

PO Claimed “Reciprocal Communication” is Not Supported

- “vice versa” PO relies on is used in only one embodiment involving only two display devices
- PO improperly reads limitations from described embodiment into the claim

Embodiment of only two display devices
frame in the respective device 6A, 6B. The transmission of the playback progress-data of the device 6A is received at the device 6B and vice versa.



According to a fundamental aspect of the invention, it is of particular advantage that the devices are designed to determine independently from a video distribution server, which distributed the video data to the devices, that they are in a synchronous or asynchronous playback progress.

Although the method of the invention was so far explained by only two display devices 6A and 6B, it is to mention that in a system with a relatively high number of display devices (e.g. a few thousands) a significant number of devices may operate for longer periods in synchronism with each other before a single asynchronous event is detected by one of the devices. This detected event of asynchronous playback progress then causes all the other devices to adjust to the frame number dictated by the device that detected the asynchronous playback progress.

Claim Construction

“designed to”

**“communication stage to
communicate data with each
other”**

“communication stage to communicate data with each other”

The first potential issue is whether “communication stage to communicate data with each other” as recited in claim 1 is a means-plus-function limitation that invokes 35 U.S.C. §112 (f). Neither party has

1. A video playback system (1), comprising a number of playback devices (6A, 6B) to playback a video on their screens (5), each playback device (6A, 6B) comprises a memory to store video data (9) representing said video, and a communication stage to communicate data with each other, wherein the devices (6A, 6B) are designed:

to transmit video playback progress-data via the communication stage to the other device (6B, 6A); and,
to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other devices (6B, 6A);

wherein the display devices (6A, 6B) are designed to display product information or product price related information by means of virtual electronic shelf labels displayed within a section of a screen's (5) display area overlapping with a video content or substituting a video content of said section.

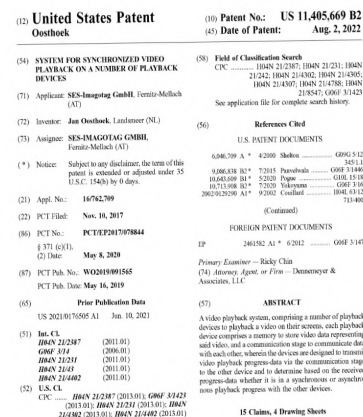
“communication stage to communicate data with each other”

PO's Construction	Petitioner's Construction
Patent Owner contends that construction of this term, including whether or not 35 U.S.C. §112(f) applies is unnecessary for the resolution of this matter.	[I]t is a functional limitation to be construed under §112(f). If the Board finds that this term does not invoking 35 U.S.C. §112(f), the proper construction for “communication stage to communicate data with each other” is <i>a communication module that performs the function of communicating with each other.</i>

The '669 Discloses No Structure for “Communication Stage”

of a video upfront to playback start at the devices. In particular the server may use the same communication stage for downloading the video data to the devices, which is thereafter used for the transmission of playback progress-data. Advantageously, after download of the video data is completed, the communication channel/medium used for downloading the video data to the device is fully available for the communication of the devices with each other.

The communication between the devices may be performed according to various protocol implementations. In order to keep the communication highly efficient in an environment with up to a few thousand devices it is of particular advantage that the communication stage is designed to use UDP multicast data packets for the communication. Here UDP stand for “User Datagram Protocol” and multicast means a transmission of a message from one device to a number of devices.



1. A video playback system (1), comprising a number of playback devices (6A, 6B) to playback a video on their screens (5), each playback device (6A, 6B) comprises a memory to store video data (9) representing said video, and a communication stage to communicate data with each other, wherein the devices (6A, 6B) are designed:

to transmit video playback progress-data via the communication stage to the other device (6B, 6A); and, to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other devices (6B, 6A);

wherein the display devices (6A, 6B) are designed to display product information or product price related information by means of virtual electronic shelf labels displayed within a section of a screen's (5) display area overlapping with a video content or substituting a video content of said section.

7. The system (1) according to claim 1, wherein each device is designed to broadcast adjustment data for adjusting the playback progress of the devices (6A, 6B) over its communication stage if it detects an asynchronous playback progress.

The Board Can Ascertain the Claim Scope with Reasonable Certainty

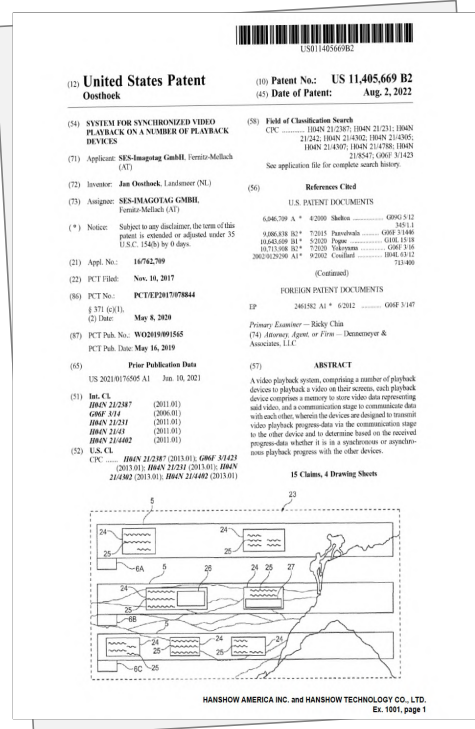


Intel Corp. v. Qualcomm Inc., 21 F.4th 801 (Fed. Cir. 2021)

"The indefiniteness of a limitation ... precludes a patentability determination only when the indefiniteness renders it logically **impossible** for the Board to reach such a decision."

For the sake of clarity, it is mentioned that the communication between the server and the devices as well as the communication between the devices may be realized either by means of wires, e.g. two wire or bus systems, or radio signals.

The communication between the devices may be performed according to various protocol implementations. In order to keep the communication highly efficient in an environment with up to a few thousand devices it is of particular advantage that the communication stage is designed to use UDP multicast data packets for the communication. Here UDP stand for "User Datagram Protocol" and multicast means a transmission of a message from one device to a number of devices.



This object is achieved by a system according to claim 1. Therefore, the subject matter of the invention is a video playback system, comprising a number of playback devices to playback a video on their screens, each playback device comprises a memory to store video data representing said video, and a communication stage to communicate data with each other, wherein the devices are designed to transmit (broadcast) video playback progress-data via the communication stage to the other device and to determine based on the received progress-data whether it is in a synchronous or asynchronous playback progress with the other devices.

ROADMAP

Alleged Invention

Claim Construction

Instituted Grounds

Ground 1 - Swafford, Masumoto

Ground 2 - Masumoto, Kipp, Takashi

Expert Qualification

Instituted Grounds

Swofford



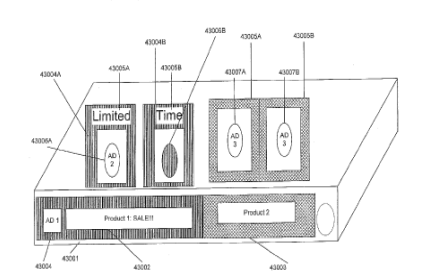
US 20160134930A1

(19) United States
(12) Patent Application Publication
Swofford

(10) Pub. No.: US 2016/0134930 A1
(43) Pub. Date: May 12, 2016

(54) SYSTEMS AND METHODS FOR
MERCHANDIZING ELECTRONIC DISPLAYS
IBAN 21/481 (2006.01)
IBAN 21/441 (2006.01)
IBAN 21/442 (2006.01)
(71) Applicant: RTC Industries, Inc., Rolling Meadows,
IL (US)
(52) U.S. CL. *IBAN 21/4827* (2013.01), *IBAN 21/4126*
(2013.01), *IBAN 21/4218* (2013.01), *IBAN*
21/812 (2013.01), *IBAN 21/4226* (2013.01),
IBAN 21/2668 (2013.01)
(72) Inventor: John Swofford, Palatine, IL (US)
(21) Appl. No.: 14/713,899
(22) Filed: May 15, 2015

(57) ABSTRACT
Systems and methods for a merchandizing display related to a continuous display formed by electronic display embedded along product shelves and on the packages stored on the product shelves. An electronic label device may detect the presence of a consumer and send a trigger to the packages on its product shelf. The electronic label device may also send a trigger to surrounding electronic label devices. A streaming video may then be superimposed among displays on electronic label devices and the packages. Each of the displays may simultaneously output a different portion of the streaming video.



Ground 1

Masumoto



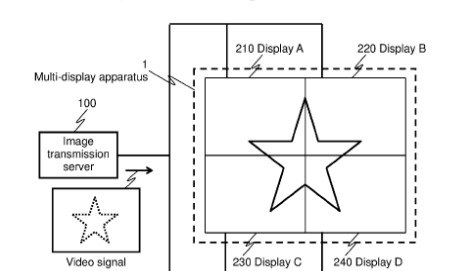
US 20170134690A1

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(12) Patent Application Publication
MASUMOTO

(10) Pub. No.: US 2017/0134690 A1
(43) Pub. Date: May 11, 2017

(54) MULTI-DISPLAY APPARATUS
(71) Applicant: Panasonic Intellectual Property
Management Co., Ltd., Osaka (JP)
(72) Inventor: JUNJI MASUMOTO, Osaka (JP)
(21) Appl. No.: 15/290,338
(22) Filed: Oct. 11, 2016

(57) ABSTRACT
The multi-display apparatus of the present disclosure is a multi-display apparatus for displaying a single image by combining a plurality of displays. The multi-display apparatus includes the plurality of displays connected to a network. Each of the plurality of displays includes a communication unit that communicates via the network and a controller. The controller determines whether a video signal can be reproduced at a predetermined display frame rate. When the video signal cannot be reproduced at the predetermined display frame rate, the controller changes a display frame rate from the predetermined display frame rate, and notifies other display of the display frame rate change. When the display frame rate change is notified from the other display, the controller changes the display frame rate to the display frame rate notified to reproduce the video signal.



Ground 2

Kipp



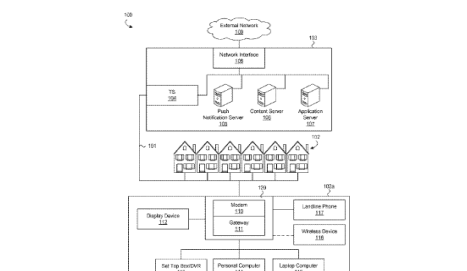
US 2017011577A1

(19) United States
(12) Patent Application Publication
Kipp

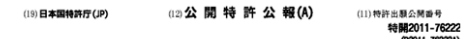
(10) Pub. No.: US 2017/011577 A1
(43) Pub. Date: Jun. 15, 2017

(54) SYNCHRONIZING PLAYBACK OF
SEGMENTED VIDEO CONTENT ACROSS
MULTIPLE VIDEO PLAYBACK DEVICES
(71) Applicant: Comcast Cable Communications,
LLC, Philadelphia, PA (US)
(72) Inventor: Neill Kipp, Centennial, CO (US)
(21) Appl. No.: 14/963,883
(22) Filed: Dec. 9, 2015

(57) ABSTRACT
Systems, methods, and devices for synchronizing playback of segmented video content across multiple video playback devices are described herein. In example implementations, a video server provides, to one or more playback devices, an age of a playlist for the video content. A particular playback device receives fragments of the video content from the video server and schedules the video fragments for playback. If the actual playback time of a video fragment is not aligned with its scheduled playback time, then video fragment is modified, e.g., by adding video frames to or removing video frames from the video fragment. Modification of the video fragments continues until the actual playback times of the video fragments synchronize with their respective scheduled playback times.



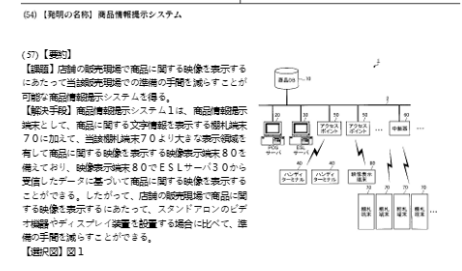
Takashi



US 2011175222A1

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G09G 5/00 (2006.01)
G09F 19/00 (2006.01)
G09G 5/06 (2006.01)
A47F 5/00 (2006.01)
(52) U.S. CL. *IBAN 21/2187* (2013.01), *IBAN 65/4884*
(2013.01), *IBAN 67/0895* (2013.01), *IBAN*
68/4881 (2013.01), *IBAN 67/26* (2013.01),
IBAN 67/267 (2013.01), *IBAN 21/8456*
(2013.01), *IBAN 21/7710* (2013.01), *IBAN*
21/8423 (2013.01), *IBAN 21/26258* (2013.01),
IBAN 21/242 (2013.01), *IBAN 21/4482*
(2013.01), *IBAN 21/458* (2013.01), *IBAN*
21/2487 (2013.01), *IBAN 21/2187* (2013.01),
IBAN 61/6068 (2013.01)
(57) ABSTRACT
Systems, methods, and devices for synchronizing playback of segmented video content across multiple video playback devices are described herein. In example implementations, a video server provides, to one or more playback devices, an age of a playlist for the video content. A particular playback device receives fragments of the video content from the video server and schedules the video fragments for playback. If the actual playback time of a video fragment is not aligned with its scheduled playback time, then video fragment is modified, e.g., by adding video frames to or removing video frames from the video fragment. Modification of the video fragments continues until the actual playback times of the video fragments synchronize with their respective scheduled playback times.



ROADMAP

Alleged Invention

Claim Construction

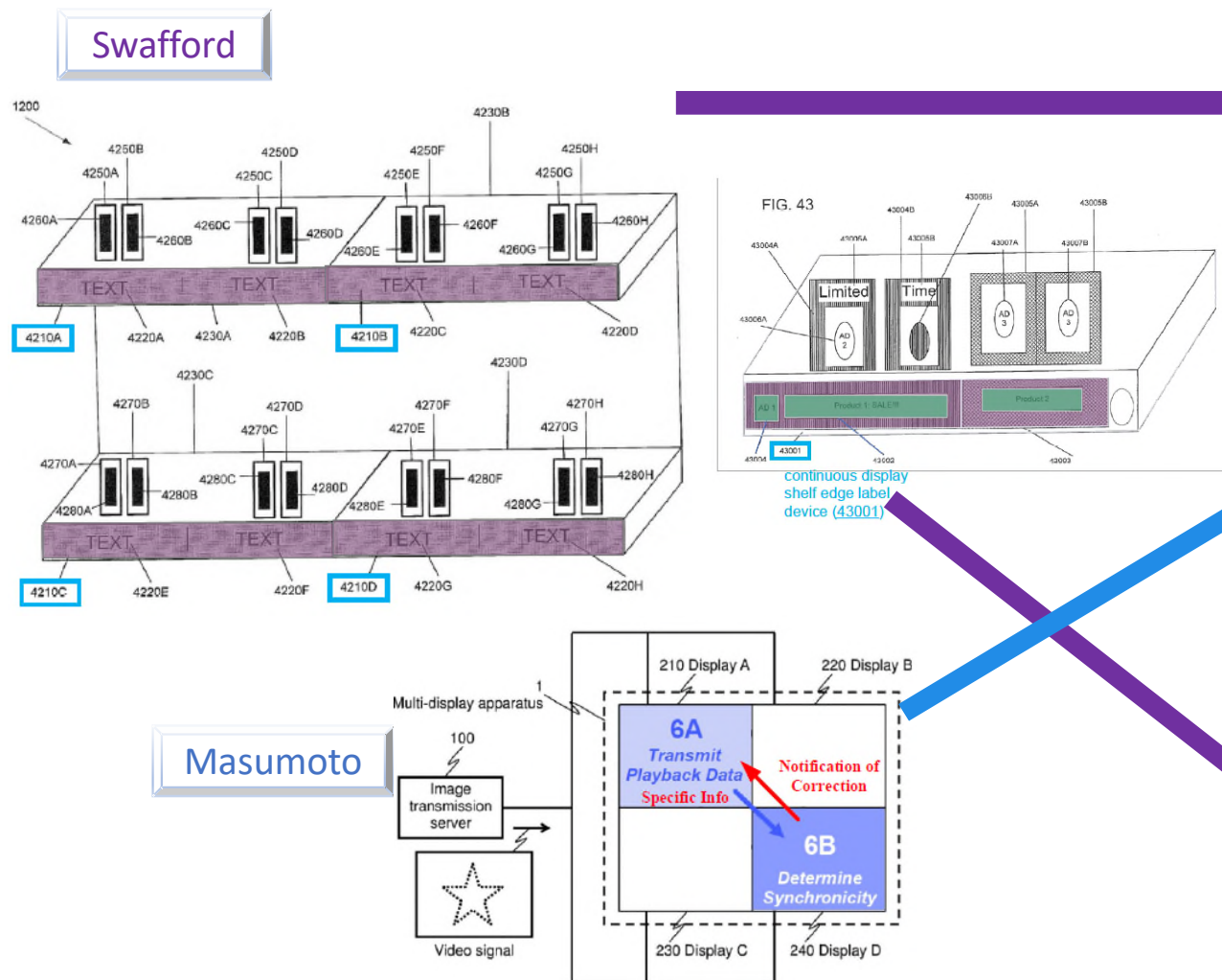
Instituted Grounds

Ground 1 - Swafford, Masumoto

Ground 2 - Masumoto, Kipp, Takashi

Expert Qualification

Claims 1-15 are Rendered Obvious over Swafford in view of Masumoto (Ground 1)



Claim 1

A video playback system (1), comprising a number of playback devices (6A, 6B) to playback a video on their screens (5),

each playback device (6A, 6B) comprises a memory to store video data (9) representing said video, and a communication stage to communicate data with each other,

wherein the devices (6A, 6B) are designed: to transmit video playback progress-data via the communication stage to the other device (6B, 6A); and, to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other devices (6B, 6A);

wherein the display devices (6A, 6B) are designed to display product information or product price related information by means of virtual electronic shelf labels displayed within a section of a screen's (5) display area overlapping with a video content or substituting a video content of said section.

Ground 1 – Disputes

Claim	Reference	Claim limitation
1	[1.3b]	[wherein the devices (6A, 6B) are designed:] to transmit video playback progress-data via the communication stage to the other device (6B, 6A); and,
	[1.3c]	to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other devices (6B, 6A);
	[1.4]	wherein the display devices (6A, 6B) are designed to display product information or product price related information by means of virtual electronic shelf labels displayed within a section of a screen's (5) display area overlapping with a video content or substituting a video content of said section.
7	[7.1]	[The system (1) according to claim 1,] wherein each device is designed to broadcast adjustment data for adjusting the playback progress of the devices (6A, 6B) over its communication stage if it detects an asynchronous playback progress.
11	[11.1]	[The system (1) according to claim 1,] wherein the communication stage is designed to use UDP multicast data packets for the communication.

If the Board Construes [1.3b] and [1.3c] to Require Actual Transmission or Determination, Masumoto Satisfies Such Limitations

[1.3b, 1.3c] recite:

[wherein the devices (6A, 6B) are designed:]

to transmit video playback progress-data via the communication stage to the other device (6B, 6A); and,

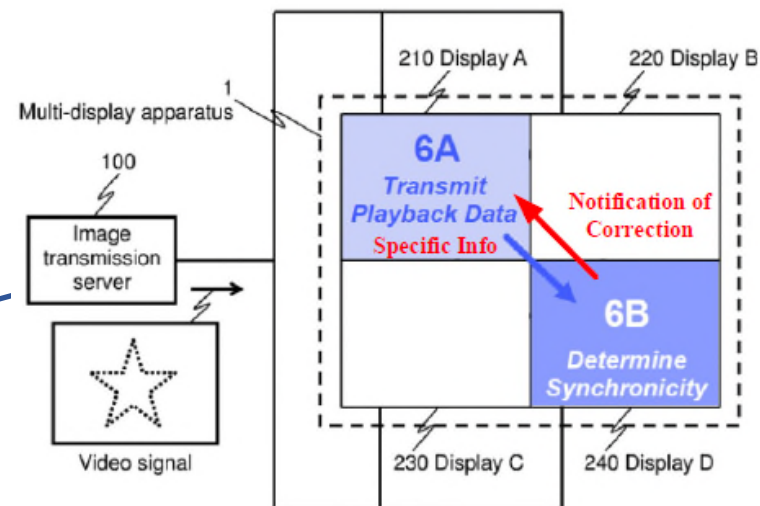
to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other devices (6B, 6A);

“the displays are designed:

to transmit specific information via the communication unit and controller to the other display and

to determine based on the received specific information whether it is in a synchronous or asynchronous playback progress with the other displays.”

Petitioner's Reply to POR, 14



[0017] Another multi-display apparatus of the present disclosure is a multi-display apparatus for displaying a single image by combining a plurality of displays. The multi-display apparatus includes the plurality of displays connected to a network. Each of the plurality of displays includes a communication unit that communicates via the network and a controller. The controller sends a request signal requesting other display to transmit specific information of a video signal displayed on the other display, and receives the specific information from the other display. The controller gives notification of correction to the other display sending the specific information with a difference when the specific information received differs from specific information of a video signal that is supposed to be displayed.

[1.3c] only broadly recites “to determine based on the received progress data”

- PO admits Masumoto’s display D “made some sort of synchronization determination”
- PO’s expert states that “the master display is always considered correct”

[1.3b, 1.3c] recite:

[wherein the devices (6A, 6B) are designed:]

to transmit video playback progress-data via the communication stage to the other device (6B, 6A); and,

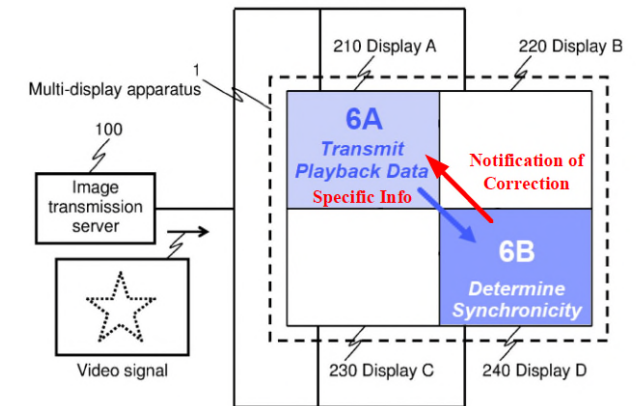
to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other devices (6B, 6A);

back progress-data.⁸ At best, transmission of the “Notice of Correction” indicates that the master display made some sort of synchronization determination, but as ex-

PO’s Sur-Reply, 16

vice. In Masumoto’s system, the master display is always considered correct (it is never out of sync), and it only calculates whether the other device is out of sync with it.

Hart Report, 147



Petitioner’s Reply to POR, 15

Masumoto Satisfies [1.3b] and [1.3c] even under PO's Limiting Construction

A: ...this change of master and slave could take place at different time instance. So there is no reference of the time node would be the master. You would have either one of these nodes would be master at some time... So number-wise, time-wise, no details are taught in 105. **Every node could be the master node that could change from second to second or from communication to communication, especially if the processing power of this criteria is not beyond the criteria for the selection for the master node.**

Tentzeris Depo. Tr., 127:15-128:6

Masumoto allows to set any display as a master "display" based on different rules.

[0076] In multi-display apparatus 1 as configured in FIG. 1, only one display in display A210 to display D240, which are components of multi-display apparatus 1, is designated as a master display for grasping the state of each display A210 to display D240. The master display may be set at initial installation of multi-display apparatus 1, or a system that a display activated first at turning on the power notifies itself as a master display to other displays may be adopted. In the description of the exemplary embodiment, for convenience, display D240 is set as the master display, and display A210 is a display with insufficient capacity to execute desired reproduction of video signals sent from image transmission server 100.

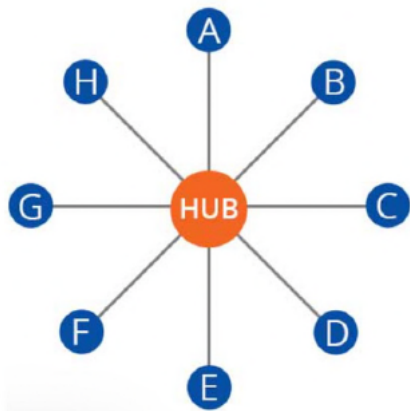
Masumoto, [0076]

[0125] In addition, to reliably operate multi-display apparatus 1, a display determining itself to be the master display preferably notifies other displays of the determination. A rule should be further provided to reset a master display if none or multiple displays notify other displays of the master display. In the exemplary embodiments, absolute times of displays are matched. However, relative times may be matched.

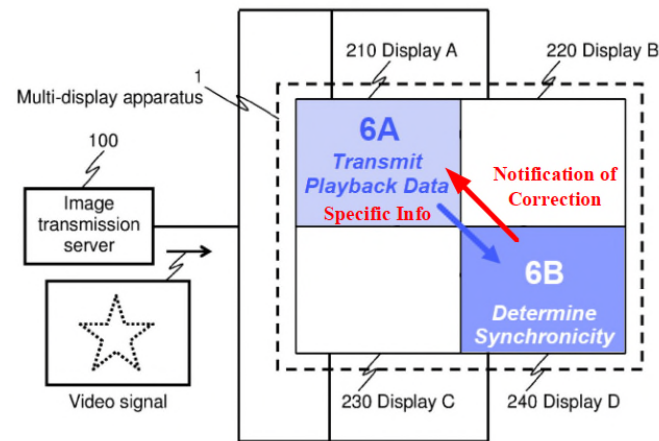
Masumoto, [0125]

Masumoto's Displays Make Synchronicity Determination Independent from Any Server

- PO tries to argue Masumoto is a “hub-and spoke” system different from a so-called “peer-to-peer” network
- Dr. Hart noting that claim 1 doesn't state “communicate directly” **Hart Depo. Tr., 113:9-12**



“Masumoto discloses that the displays determine synchronous or asynchronous status based on specific information of video signal (e.g., frame number, time stamp) that is transmitted among the displays, independently from the transmission server.” **Petition, 33**

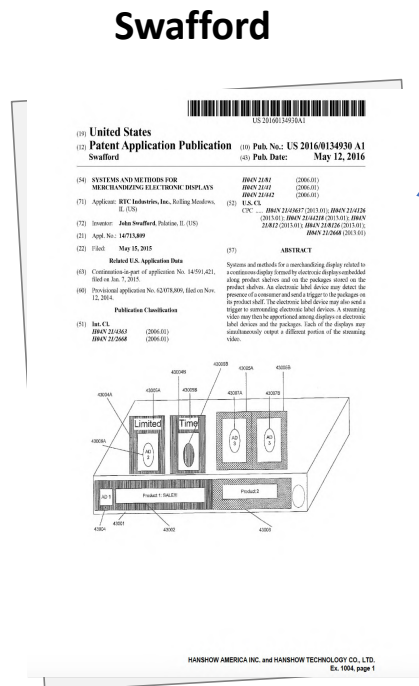


Petitioner's Reply to POR, 15

Swafford (Ground 1) Discloses Claim 1, [1.4]

[1.4]

wherein the display devices (6A, 6B) are designed to display product information or product price related information by means of virtual electronic shelf labels displayed within a section of a screen's (5) display area **overlapping** with a video content **or substituting** a video content of said section.

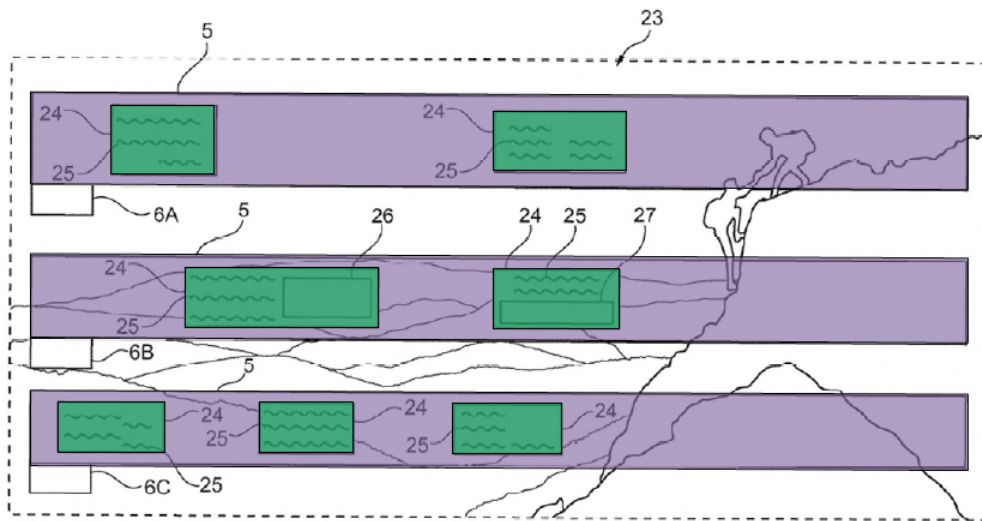


[0287] As the single continuous display 29301 is designed to be dynamic, the displayed messages are not restricted to any particular size or configuration. Rather, the message may be dynamically and continuously altered, and may include any combination of any number of single continuous displays, user interfaces, products, and the packages encapsulating the products. In one instance, the separate user interfaces

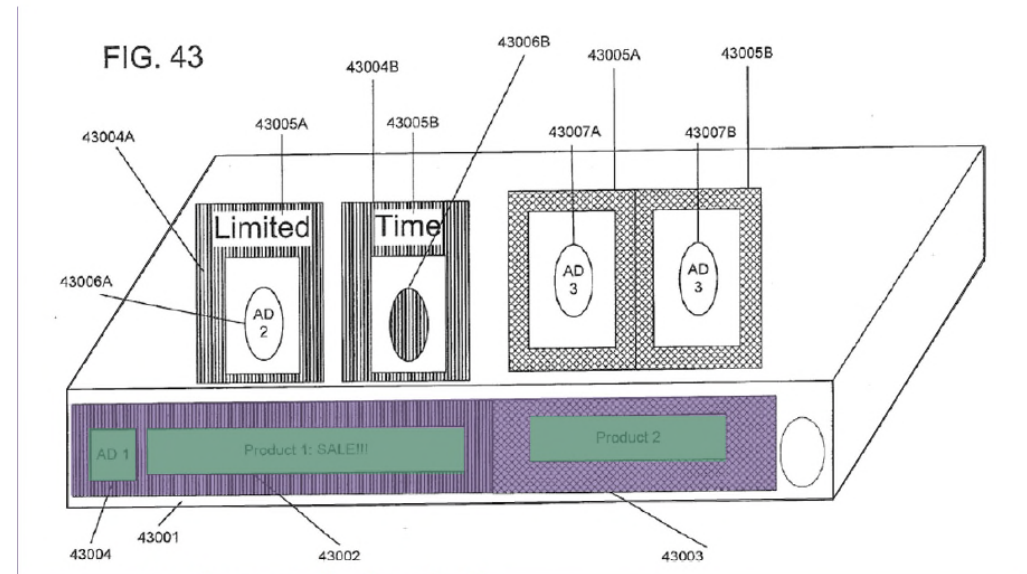
interfaces on each of the continuous displays. The message may include graphics, text, animations, streaming video, or any combination thereof. Each of the vertically-stacked mul-

Swafford, [0287]

Petition Expressly Identified “Overlapping” Disclosed by Swafford (Ground 1)



the '669, FIG.6 (annotated)

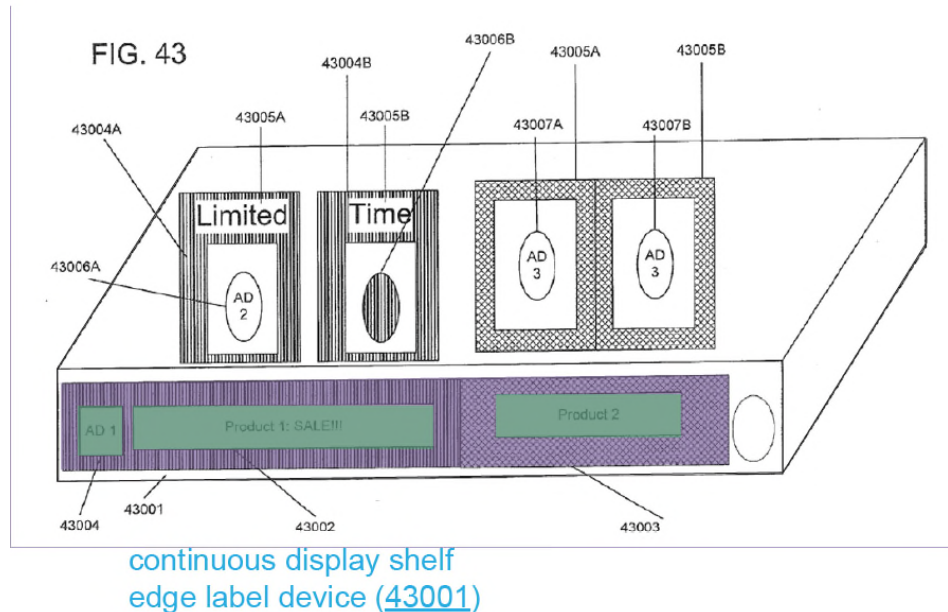


continuous display shelf
edge label device (43001)

Swafford, FIG.43 (annotated)

Ex.1001, FIG.6 (annotated); Ex.1004 (Swafford), FIG.43 (annotated);
Paper 2 (Petition), 28-30; Paper 28 (Petitioner's Reply to POR), 17-18

Petition Expressly Identified “Overlapping” Disclosed by Swafford (Ground 1)



Swafford, FIG.43 (annotated)

example discussed above in relation to FIG. 42. Display 43002 provides information on products 43006A and 43006B and may also display a static or dynamic advertisement 43004. For example, the background of display 43002 may display the logo representing the manufacturer of products 43006A and 43006B. Display 43003 can provide information on products 43007A and 43007B. Also the background of display 43003 may display the logo representing the manufacturer of products 43007A and 43007B, where the logo displayed on the background of display 43003 may differ from the logo displayed on the background of display 43002. However, it is contemplated that the backgrounds of displays 43002 and 43003 may display additional information, such as static images or streaming video of products 43006A-B and 43007A-B, promotional content, good-will messages, advertisements or any related information.

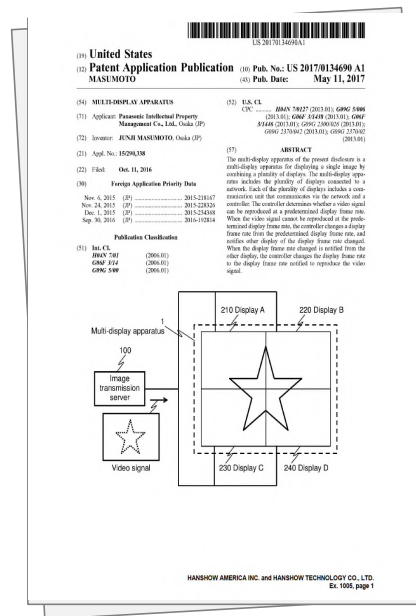
Swafford, [0388]

Masumoto Discloses Broadcasting Adjustment Data as Recited in Claim 7, [7.1]

[7.1] recites:

[The system (1) according to claim 1,] wherein each device is designed to broadcast adjustment data for adjusting the playback progress of the devices (6A, 6B) over its communication stage if it detects an asynchronous playback progress.

Masumoto



[0079] A display frame rate determined based on comparison result in Step S7 is notified from display D240, which is the master display, to other display A210 to display C230 (Step S8). This can reduce a risk of erroneous setting due to individual determination by each display when a change request for display frame rate is made from multiple displays. In addition, a determination process can be unified to reduce network traffic. Accordingly, a simple system can be configured.

Dr. Tentzeris testified that A POSITA Would Understand that “Broadcast” is about Transmitting to Any Number of Recipients

[7.1] recites:

[The system (1) according to claim 1,] wherein each device is designed to broadcast adjustment data for adjusting the playback progress of the devices (6A, 6B) over its communication stage if it detects an asynchronous playback progress.

17 A. That would be one case as a subcase of the
18 transmission, generically. So what I said is that's a
19 transmission from one node to another to one node, from
20 one node to multiple nodes without any knowledge of the
21 number. So broadcast does not have a specific number of
22 servers broadcast, has to do with the transmission. So
23 that's -- that's the whole point of the broadcast term.

Tentzeris Depo. Tr., 53:21-23

3 THE WITNESS: Unless specifically defined by
4 some additional data, the transmitting device would
5 not -- would not care about the number. Now, if the data
6 includes specific information about specific servers, that
7 would be considered as part of the broadcast. But,
8 again, I repeat, the fact that broadcast has to do with
9 the transmitter. Broadcast does not have the number of
10 the servers.

Tentzeris Depo. Tr., 54:7-10

25 So broadcasting, as I said, could be one-on-one

1 or could be one to different nodes. *Tentzeris Depo. Tr., 58:25*

Page 59

UDP is a Well-known Communication Protocol as Required by [11.1]

[11.1]

[The system (1) according to claim 1,] wherein the communication stage is designed to use UDP multicast data packets for the communication.

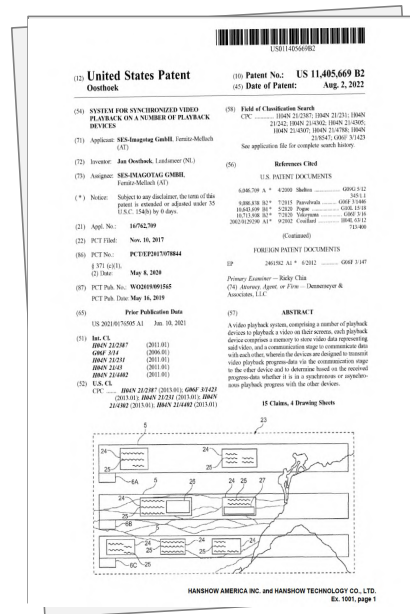
- Dr. Tentzeris states that
 - “User Datagram Protocol (UDP) is a well-known communication protocol for time-sensitive applications like gaming or playing videos.” *Tentzeris Rep., 137*
 - “‘UDP’ is really commonly utilized for multicast of information to all the players.” *Tentzeris Depo. Tr., 62:19-21*
- PO ignores Swafford’s explicit disclosure of wireless communication or wired communication through network 28210. *Swafford, [0274]*
- The ’669 Patent never mentions *secure data* or *data security*, and the existence of other network protocols (e.g., TCP/IP) would not prevent a POSITA from using the well-known UDP protocol. *Petitioner’s Reply to POR, 20*

The '669 Does Not Distinguish UDP Communication from UDP Multicast Data for Progress Data

[11.1]

[The system (1) according to claim 1,] wherein the communication stage is designed to use UDP multicast data packets for the communication.

The 669



The communication between the devices may be performed according to various protocol implementations. In order to keep the communication highly efficient in an environment with up to a few thousand devices it is of particular advantage that the communication stage is designed to use UDP multicast data packets for the communication. Here UDP stand for “User Datagram Protocol” and multicast means a transmission of a message from one device to a number of devices.

- The '669 Patent discloses UDP multicast data packets for communication as an example of “various protocol implementations.”

Petition Provides a Reasoned Rationale for Combining Swafford and Masumoto (Ground 1)

No compatibility issue between Swafford and Masumoto

- Neither Swafford, Masumoto, nor the '669 Patent specifies display sizes, aspect ratios, and pixel counts.
- PO misapplies the law by arguing that incompatibility would dissuade a POSITA from incorporating unmodified displays from Masumoto into Swafford's system.



Facebook, Inc. v. Windy City Innovations, LLC, 953 F.3d 1313, 1333 (Fed. Cir. 2020)

"The test for obviousness is **not** whether the features of a secondary reference may be **bodily incorporated** into the structure of the primary reference."



Orthopedic Equipment Co., Inc. v. United States, 702 F.2d 1005, 1013 (Fed. Cir. 1983)

"There is a distinction between trying to **physically combine** the two separate apparatus disclosed in two prior art references on the one hand, and on the other hand trying to **learn enough from the disclosures** of the two references to render obvious the claim in suit."



Skedco, Inc. v. Strategic Operations, Inc., 287 F.Supp.3d 1100 (Fed. Cir. 2018)

"Claims may be obvious in view of a combination of references, **even if the features of one reference cannot be substituted physically into the structure of the other reference.**"

Swafford and Masumoto are Directed to the Same Goal

The Board has correctly rejected SES's argument that Swafford and Masumoto are not directed to the same goal

- The disclosures of Yamada and Kipp are not hindsight but show that there was a well-recognized need for low bandwidth and simple, inexpensive hardware before the critical date of the '669 Patent.
- Dr. Hart has confirmed that lower network bandwidth requirements was one consideration for a POSITA before the invention date.
- The disclosure of "off-the-shelf" alternatives in Swafford does not negate a motivation to modify Swafford with Masumoto's solution to arrive at the claimed invention.



In re Gorman, 933 F.2d 982, 986 (Fed. Cir. 1991)

"The extent to which such suggestion must be explicit in, or may be fairly inferred from, the references, is decided on the facts of each case, in light of the prior art and its relationship to the applicant's invention."



In re Fulton, 391 F.3d 1195, 73 USPQ2d 1141 (Fed. Cir. 2004)

"The source of the teaching, suggestion, or motivation may be 'the nature of the problem,' **'the teachings of the pertinent references,'** or 'the ordinary knowledge of those skilled in the art.'"

"[M]ere disclosure of alternative designs **does not teach away.**"

Structural Similarity Supports Motivation to Combine

- Given the structural similarity between Swafford's and Masumoto's devices ... a POSITA would recognize that it would improve Swafford's similar device (i.e., electronic label device including the LCD displays) in the same way.

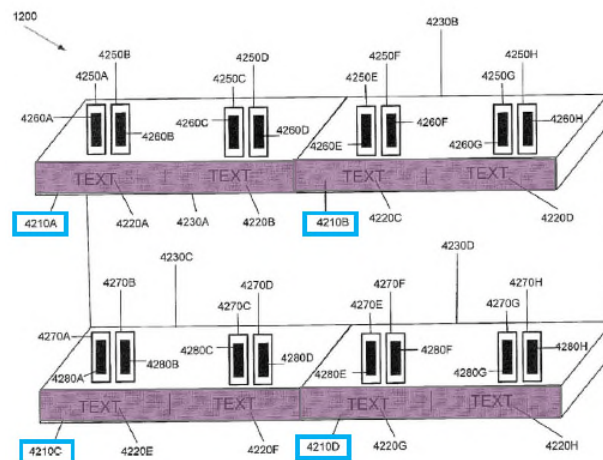


FIG. 42 of Swafford

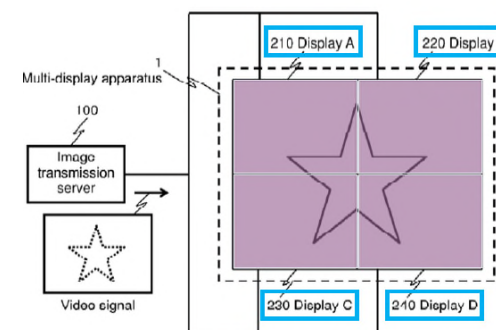


FIG. 1 of Masumoto



Intel Corp. v. PACT XPP Schweiz AG, 61 F.4th 1373, 1380 (Fed. Cir. 2023)

"[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would **improve similar devices in the same way**, using the technique is obvious unless its actual application is beyond his or her skill."



Unwired Planet, LLC v. Google Inc., 841 F.3d 995, 1003 (Fed. Cir. 2016)

"For the technique's use to be obvious, the skilled artisan need only be able to recognize, based on her background knowledge, **its potential to improve the device and be able to apply the technique.**"

Paper 28 (Petitioner's Reply to POR), 23; Paper 2 (Petition), 54-55; Ex.1004 (Swafford), FIGS. 42 (annotated); Ex.1005 (Masutomo), FIG.1 (annotated)

Demonstrative Exhibit – Not Evidence

41

ROADMAP

Alleged Invention

Claim Construction

Instituted Grounds

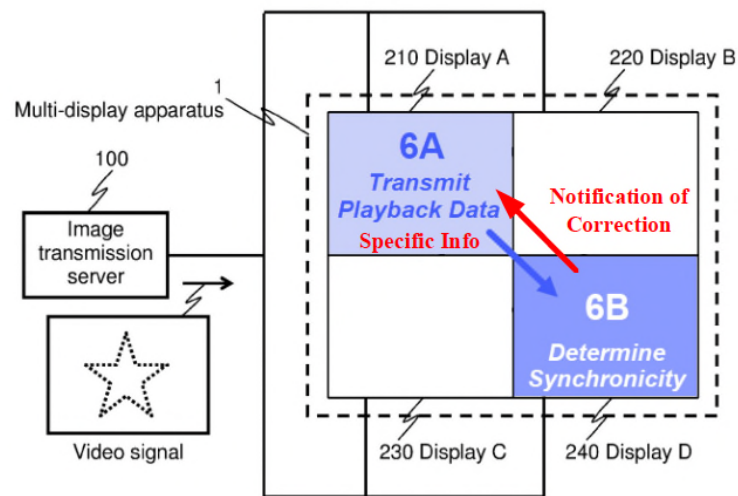
Ground 1 - Swafford, Masumoto

Ground 2 - Masumoto, Kipp, Takashi

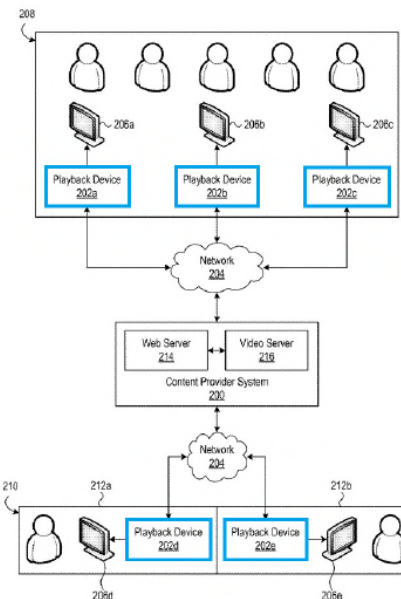
Expert Qualification

Claims 1-15 are Rendered Obvious over Masumoto, Kipp, and Takashi (Ground 2)

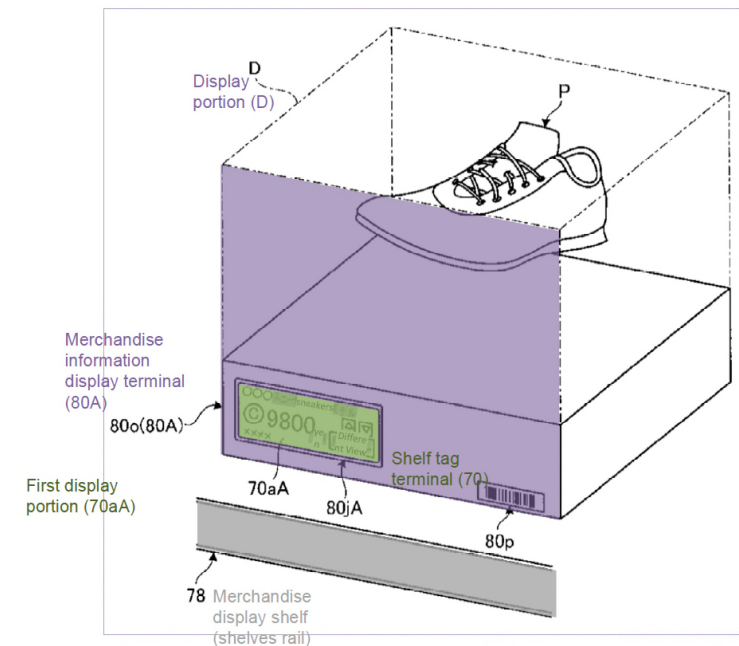
Masumoto



Kipp



Takashi



Ex.1005 (Masumoto), FIG.1 (annotated); Ex.1006 (Kipp), FIG.2 (annotated);
Ex.1008 (Takashi), FIG.14 (annotated)

Ground 2 – Disputes

Claim	Reference	Claim limitation
1	[1.3b]*	[wherein the devices (6A, 6B) are designed:] to transmit video playback progress-data via the communication stage to the other device (6B, 6A); and,
	[1.3c]*	to determine based on the received progress data whether it is in a synchronous or asynchronous playback progress with the other devices (6B, 6A);
	[1.4]	wherein the display devices (6A, 6B) are designed to display product information or product price related information by means of virtual electronic shelf labels displayed within a section of a screen's (5) display area overlapping with a video content or substituting a video content of said section.
7	[7.1]*	[The system (1) according to claim 1,] wherein each device is designed to broadcast adjustment data for adjusting the playback progress of the devices (6A, 6B) over its communication stage if it detects an asynchronous playback progress.
11	[11.1]*	[The system (1) according to claim 1,] wherein the communication stage is designed to use UDP multicast data packets for the communication.

* Same argument regarding [1.3b], [1.3c], [7.1], and [11.1] as Ground 1

Claim 1, [1.4] Only Recites “Virtual Electronic Shelf Labels”

[1.4]

wherein the display devices (6A, 6B) are designed to display product information or product price related information by means of **virtual electronic shelf labels** displayed within a section of a screen's (5) display area overlapping with a video content or substituting a video content of said section.

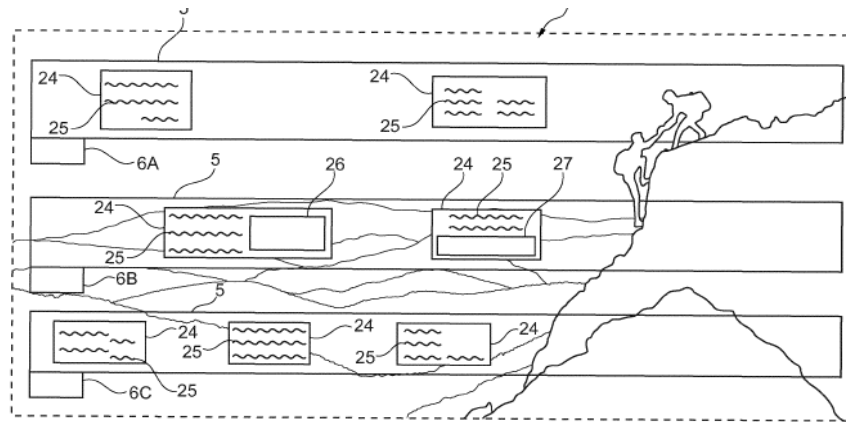
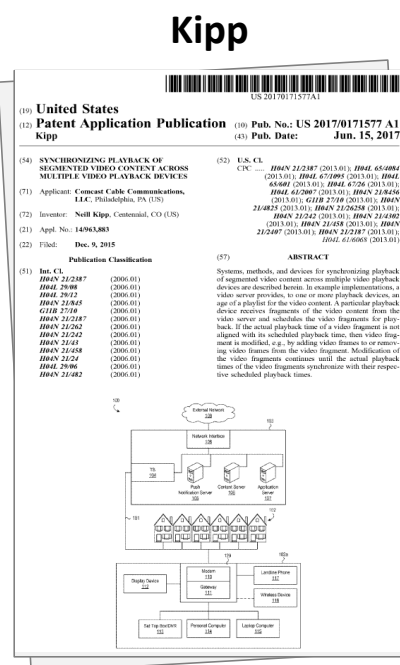


Fig. 6

Only FIG. 6 “shows electronic shelf label content 24 (of virtual electronic shelf labels) displayed at the appropriate position.”

claim 1 recites “virtual electronic shelf labels” as a means to display product information or product price-related information

Kipp and Takashi disclose [1.4] because claim 1 recites “virtual electronic shelf labels” as a means to display product information or product price-related information



ing that information for use in selecting advertisements. Yet another application server may be responsible for formatting and inserting advertisements in a video stream being transmitted to the premises 102. Still another application server 107 may be responsible for tracking and collecting billing less, etc.) to connect multiple premises 102 (e.g., businesses, homes, consumer dwellings, etc.) to a local office or head

Kipp, [0033], [0036]

- Dr. Tentzeris stated that “a POSITA would understand that in a business premise, such as a retail store setting, the content associated with the premise will include product information.” ***Tentzeris Rep., 178***

Kipp and Takashi disclose [1.4]

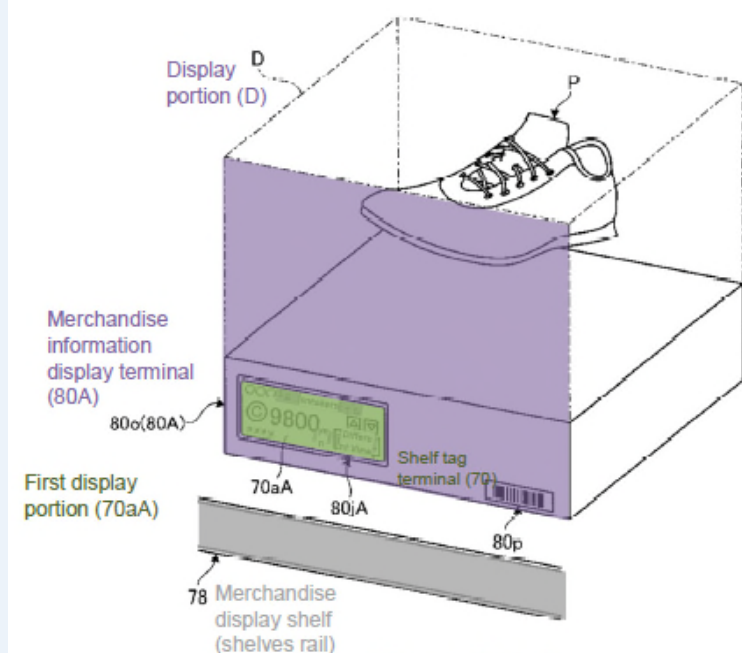


FIG. 14 of Takashi

【 0 0 2 1 】

In addition, in the present embodiment, a housing 80o of the image display terminal 80 is provided with a terminal code display portion 80p showing a barcode as the terminal code, and an input operation portion 80j is also provided for users (customers, store employees, etc.) to perform operations for switching the images P. Note that the image display terminal 80 may display not only the appearance of the merchandise, but also cross-sections and other images, display still images, and display videos such as usage and commercial video.

【 0 0 5 2 】

In addition, the input operation section may be configured separately from the video display terminal, the shelf tag terminal is not limited to what is illustrated in the above embodiments, and various variations are possible. In addition, code in a format other than a barcode can be used as the terminal code and merchandise code. In addition, data indicating images of merchandise may be sent to the image display terminal via the shelf tag terminal. In addition, the image display terminal or the second display unit may display text information about the merchandise along with images relating to the merchandise.

Takashi discloses that the image display terminal is configured to display text information about the merchandise via virtual electronic shelf labels displayed within a section of the display area of the merchandise information display terminal [80; 80A] that is overlapping with the video displayed.

Petition, 70

Petition Provides a Reasoned Rationale for Combining Masumoto, Kipp and Takashi (Ground 2)

- The Board has correctly rejected PO'S same argument claiming that Masumoto and Kipp have different goals
- Attracting customers' attention is not generic because Takashi expresses concern for attracting customers.

【 0 0 4 5 】

As explained above, the merchandise information display system 1 according to the present embodiment is provided with, as the merchandise information display terminal, the shelf tag terminal 70 which displays text information about the merchandise, an image display terminal 80 which has a larger display area than the shelf tag terminal 70 and displays images relating to the merchandise based on data received from the ESL server 30 in the image display terminal 80. Therefore, the advantage is provided of making it possible to omit displaying actual merchandise, thereby being able to avoid merchandise soiling and theft, etc., and allowing customers to choose the desired merchandise. In addition, regardless of the presence or absence of physical displays, the effect is obtained of customers' interest in the merchandise being increased, contributing to sales promotion. In accordance with this embodiment, when displaying images relating to merchandise at a point of sale in a store, preparation work can be reduced compared to when installing a stand-alone video device or display device.

【 0 0 4 7 】

Also, in the present embodiment, the image display terminal 80 is capable of displaying images of a plurality of merchandise items. Thus, the above effect according to the present invention can be obtained for a plurality of merchandise items. Also, by switching between merchandise items for which images are displayed, customers can select the desired merchandise item from among multiple merchandise items.

【 0 0 5 0 】

Also, in the present embodiment, the image display terminal 80 displays images of the merchandise. As a result, customers can better understand the appearance, modes of use, operation, and so on of merchandise, making it easier to select merchandise. In addition, for stores, the effect is that the customer's interest in the merchandise will be further increased, which contributes to sales promotion.

- PO uses the same rationale as in Ground 1 to argue structural similarity

ROADMAP

Alleged Invention

Claim Construction

Instituted Grounds

Ground 1 - Swafford, Masumoto

Ground 2 - Masumoto, Kipp, Takashi

Expert Qualification

Dr. Tentzeris Has the Knowledge and Experience to Qualify as an Expert



SEB S.A. v. Montgomery Ward & Co., 594 F.3d 1360, 1373 (Fed. Cir. 2010)

There is "no requirement of a perfect match between the expert's experience and the relevant field."

- Dr. Tentzeris has substantial experience in multimedia systems. *Ex. 2002, 10:9-13, 11:12-19, Ex. 1011, 87.*
- With over 30 years of industry and academic experience, Dr. Tentzeris' expertise will assist the Board.

- PO asserts that Dr. Tentzeris' experience with levels higher than the physical layer of the OSI model is "exceedingly limited" by ignoring his experience with higher layers including application layers.
- PO does not address this argument in its Sur-reply.