

(12) **United States Patent**  
**Iwabuchi et al.**

(10) **Patent No.:** **US 8,363,087 B2**  
(45) **Date of Patent:** **Jan. 29, 2013**

(54) **TELEVISION RECEIVER WITH A TV PHONE FUNCTION**

(75) Inventors: **Kazunori Iwabuchi**, Yokohama (JP);  
**Hiroki Mizosoe**, Kawasaki (JP);  
**Mutsumi Shimoda**, Kawasaki (JP);  
**Setiawan Bondan**, Yamato (JP);  
**Manabu Sasamoto**, Yokohama (JP)

(73) Assignee: **Hitachi, Ltd.**, Tokyo (JP)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 632 days.

(21) Appl. No.: **12/457,257**

(22) Filed: **Jun. 4, 2009**

(65) **Prior Publication Data**  
US 2010/0073455 A1 Mar. 25, 2010

(30) **Foreign Application Priority Data**  
Sep. 25, 2008 (JP) ..... 2008-246232

(51) **Int. Cl.**  
**H04N 7/14** (2006.01)

(52) **U.S. Cl.** ..... **348/14.04**

(58) **Field of Classification Search** ..... 348/14.04,  
348/14.01, 14.07  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

5,526,037 A \* 6/1996 Cortjens et al. .... 348/14.04  
6,339,842 B1 \* 1/2002 Fernandez et al. .... 348/14.04

7,593,031 B2 \* 9/2009 Root et al. .... 348/14.04  
8,013,938 B2 \* 9/2011 Shyu ..... 348/14.04  
2007/0139514 A1 \* 6/2007 Marley ..... 348/14.01  
2007/0216760 A1 9/2007 Kondo et al.  
2009/0073253 A1 \* 3/2009 Lee ..... 348/14.04  
2009/0079813 A1 \* 3/2009 Hildreth ..... 348/14.03  
2009/0174762 A1 \* 7/2009 Takahashi ..... 348/14.02  
2009/0251526 A1 \* 10/2009 Book ..... 348/14.01

**FOREIGN PATENT DOCUMENTS**

JP 05-056190 8/1991  
JP 05-236472 2/1992  
JP 07-184174 12/1993  
JP 09-083983 9/1995  
JP 2006-20286 5/2005

\* cited by examiner

*Primary Examiner* — Stella Woo

(74) *Attorney, Agent, or Firm* — Stites & Harbison, PLLC;  
Juan Carlos A. Marquez, Esq.

(57) **ABSTRACT**

A videophone system includes a processor which selectively sets a television (TV) broadcast program viewing function mode and videophone function mode in response to manual operation of a remote control, a decoder which performs, in the TV program view mode, a TV program-use decode function for decoding a broadcast program signal received from a TV tuner to thereby display it on a display screen while producing audio sounds by loudspeakers and which performs, in the videophone function mode a videophone-use decode function for decoding a videophone signal received from a distant party to thereby display on the screen an image of the distant party using the screen and speakers, and an encoder which performs a videophone-use encode function for encoding a video signal from a camera and a voice signal from a microphone to generate a videophone signal, which is sent to the distant party via a network.

**8 Claims, 10 Drawing Sheets**

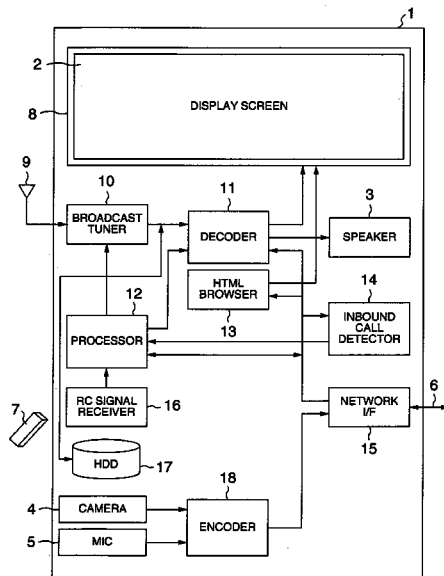


FIG. 1

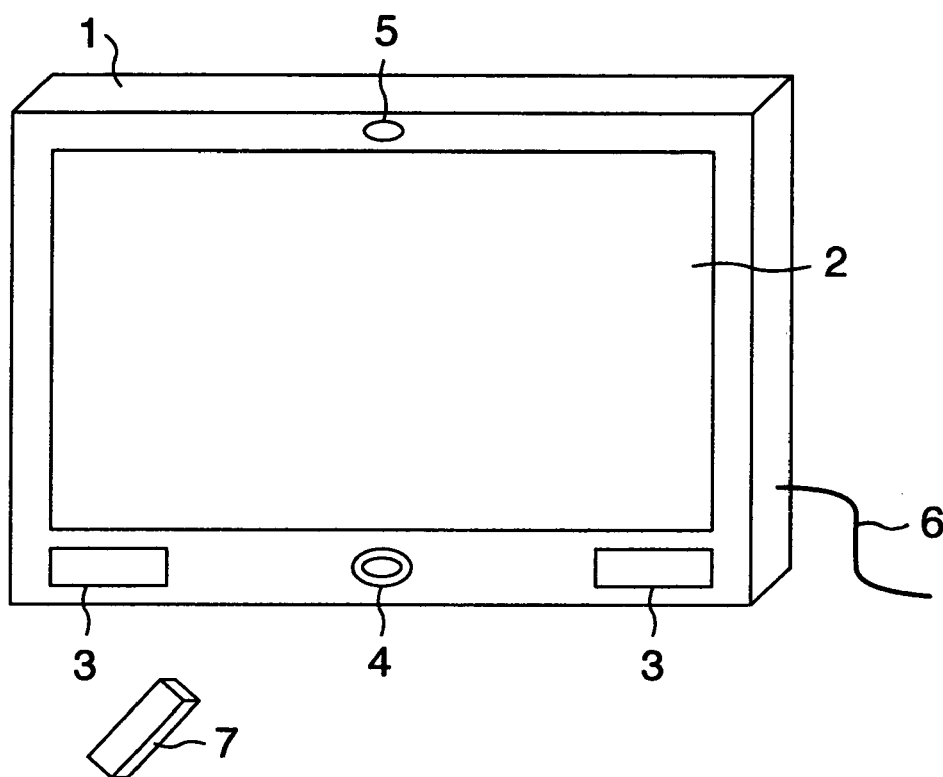


FIG. 2

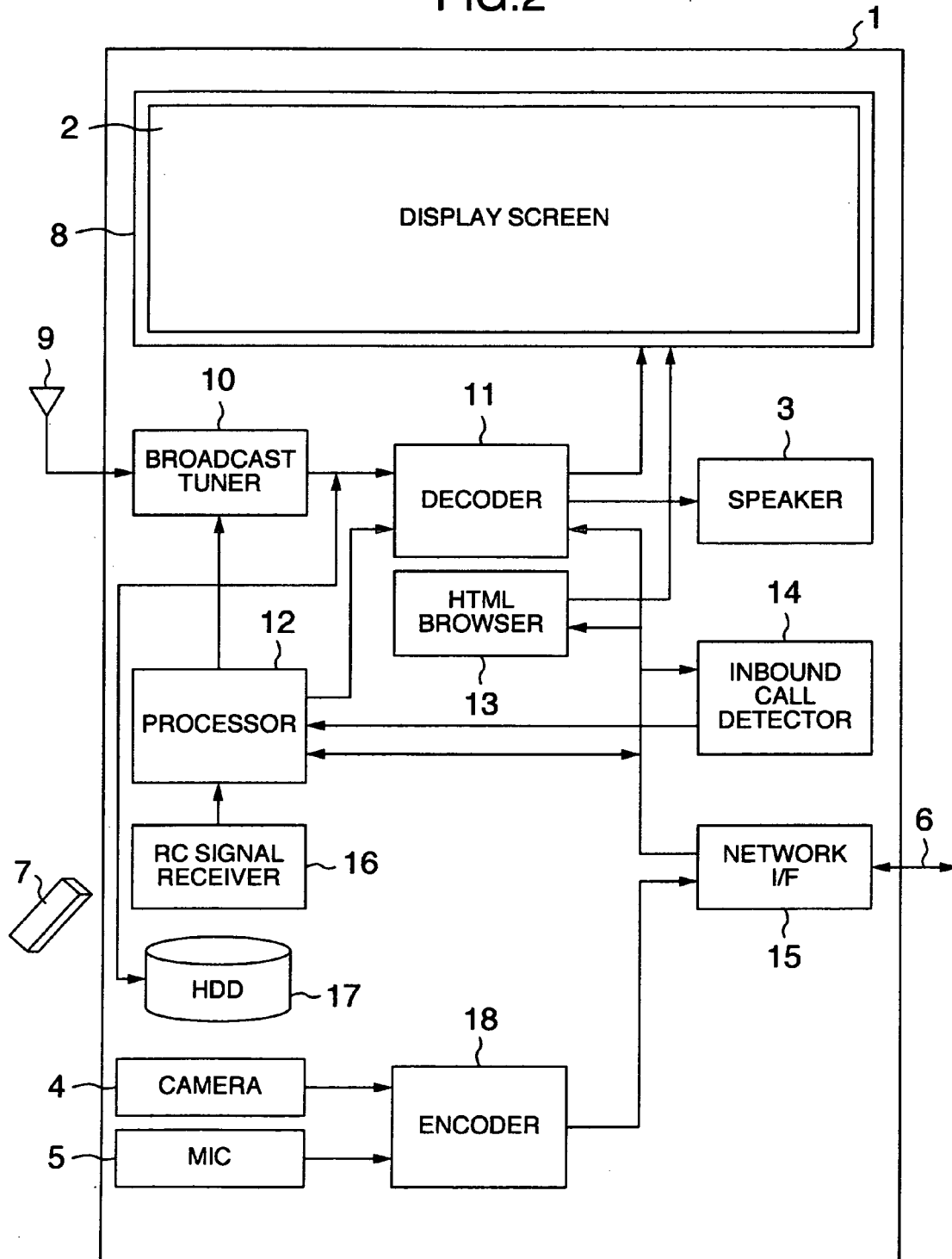


FIG.3

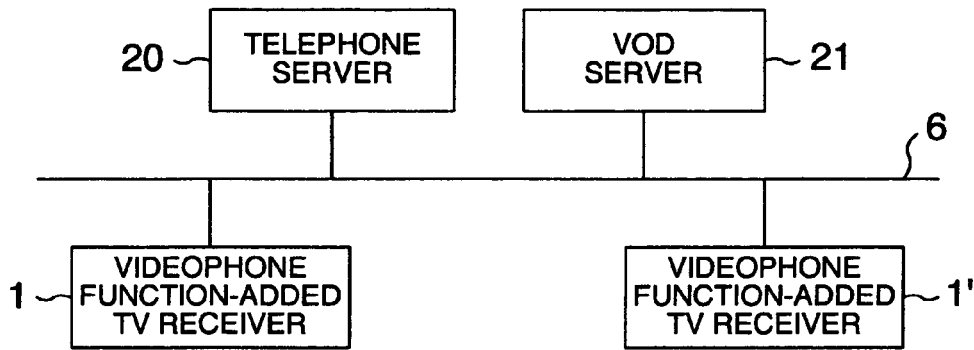


FIG.4

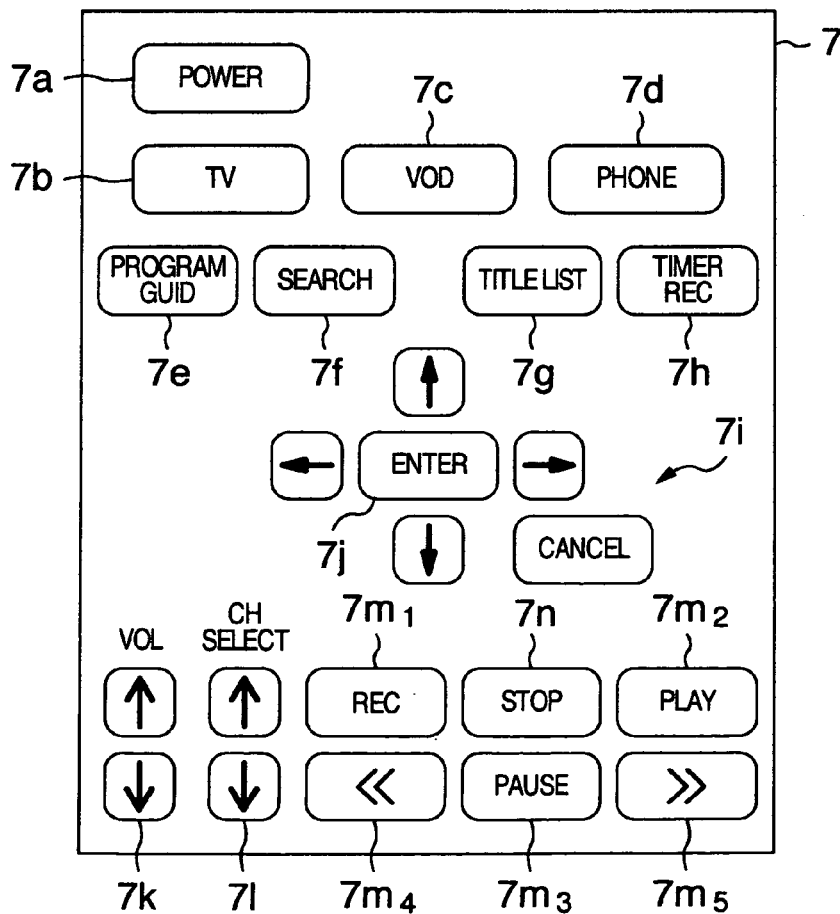


FIG.5

ITEM #	VOD PROCESSING	PHONE PROCESSING	REMARKS
1	PW BUTTON DEPRESSED	PW BUTTON DEPRESSED	
2	<ul style="list-style-type: none"> <li>• VOD BUTTON DEPRESSED</li> <li>• BROWSER START</li> </ul>	<ul style="list-style-type: none"> <li>• PHONE BUTTON PRESSED</li> <li>• BROWSER START</li> </ul>	SERVER SENDS OPERATION SCREEN
3	TITLE SELECTED & DECIDED	CALL DESTINATION SELECTED & DECIDED	
4	CHECK CHARGE & PLAYBACK RIGHT	<ul style="list-style-type: none"> <li>• DISPLAY CALLING MESSAGE</li> <li>• ACTIVATE CAMERA, MIC &amp; ENCODER</li> </ul>	
5	<ul style="list-style-type: none"> <li>• SWITCH DECODER INPUT</li> <li>• DECODER OPERATION START</li> <li>• PLAYBACK</li> </ul>	<ul style="list-style-type: none"> <li>• SWITCH DECODER INPUT</li> <li>• DECODER OPERATION START</li> <li>• TALKING BY PHONE</li> </ul>	
6	<ul style="list-style-type: none"> <li>• STOP BUTTON DEPRESSED</li> <li>• DECODER STOP</li> <li>• BROWSER STOP</li> </ul>	<ul style="list-style-type: none"> <li>• STOP BUTTON DEPRESSED</li> <li>• DECODER STOP</li> <li>• BROWSER STOP</li> <li>• CAMERA, MIC &amp; ENCODER DEACTIVATED</li> </ul>	SAME BUTTON OPERATION AS DECODER IS DEACTIVATED
7	PLAYBACK END	CALL END	

FIG.6

	PW OFF	DURING TV WATCHING	DURING VOD WATCHING	OTHERS
CALL ARRIVED	<ul style="list-style-type: none"> <li>• AUTO-PW ON</li> <li>• CALL HANDLING</li> <li>• TV WATCHING</li> </ul>	<ul style="list-style-type: none"> <li>• AUTO-VIDEOREC START</li> <li>• CALL HANDLING</li> <li>• AUTO-PLAY START</li> </ul>	<ul style="list-style-type: none"> <li>• AUTO-PAUSE</li> <li>• CALL HANDLING</li> <li>• PAUSE RESET</li> </ul>	<ul style="list-style-type: none"> <li>• PRESENT STATE SAVE</li> <li>• CALL HANDLING</li> <li>• RECOVER TO SAVED STATE</li> </ul>

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.