

EXHIBIT 12



US011086934B2

(12) **United States Patent**
Strober

(10) **Patent No.:** **US 11,086,934 B2**

(45) **Date of Patent:** **Aug. 10, 2021**

(54) **PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE**

(71) Applicant: **Touchstream Technologies, Inc.**,
Valhalla, NY (US)

(72) Inventor: **David Strober**, Rye, NY (US)

(73) Assignee: **Touchstream Technologies, Inc.**,
Valhalla, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **16/917,095**

(22) Filed: **Jun. 30, 2020**

(65) **Prior Publication Data**

US 2020/0334291 A1 Oct. 22, 2020

Related U.S. Application Data

(63) Continuation of application No. 15/687,249, filed on Aug. 25, 2017, now Pat. No. 11,048,751, which is a (Continued)

(51) **Int. Cl.**
G06F 3/01 (2006.01)
G06F 16/74 (2019.01)
(Continued)

(52) **U.S. Cl.**
CPC **G06F 16/74** (2019.01); **G06F 9/452** (2018.02); **G06F 16/951** (2019.01)

(58) **Field of Classification Search**
CPC G06F 16/74; G06F 9/452; G06F 16/951
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,855,842 A 8/1989 Hayes et al.
5,613,137 A 3/1997 Bertram et al.
(Continued)

FOREIGN PATENT DOCUMENTS

CN 101534449 A 9/2009
CN 101577650 A 11/2009
(Continued)

OTHER PUBLICATIONS

"AnyRemote", Retrieved from Internet URL: <http://anyremote.sourceforge.net/>, pp. 2 (2013).

(Continued)

Primary Examiner — Tadesse Hailu

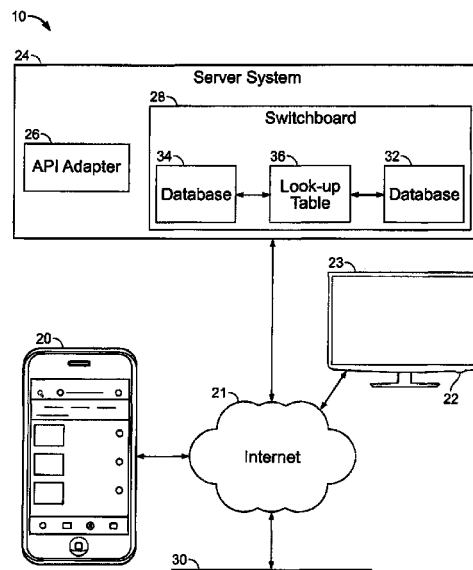
Assistant Examiner — Darrin Hope

(74) *Attorney, Agent, or Firm* — Shook, Hardy & Bacon L.L.P.

(57) **ABSTRACT**

A system for controlling playback of various types of content includes a first computing device that provides a unique identifier to a second computing device to establish an association there between. By virtue of the established association, the second computing device can send one or more messages to the first computing device, the one or more messages referencing a piece of content associated with a first media playing element of a plurality of media playing elements, and one or more commands corresponding to the first media playing element. The first computing device can select the first media playing element based on the received one or more messages, and control how the first media playing element plays the referenced piece of content utilizing the one or more commands.

20 Claims, 9 Drawing Sheets



1

**PLAY CONTROL OF CONTENT ON A
DISPLAY DEVICE****CROSS-REFERENCE TO RELATED
APPLICATIONS**

The present application is a continuation of U.S. application Ser. No. 15/687,249, filed Aug. 25, 2017, which is a continuation of U.S. application Ser. No. 13/532,546, filed on Jun. 25, 2012, which is a continuation-in-part of U.S. application Ser. No. 13/157,821, filed on Jun. 10, 2011, which issued on Dec. 2, 2014 as U.S. Pat. No. 8,904,289, which claims the benefit of priority to U.S. Provisional Patent Application No. 61/477,998, filed on Apr. 21, 2011. The contents of the earlier applications are incorporated herein by reference.

BACKGROUND

This disclosure relates to play control of content on a display device. Such display devices include, for example, television displays used by consumers in their home for viewing videos and other media that are either provided from the Web or previously stored. In particular, the disclosure relates to the creation, storage, manipulation and access of media playlists used in conjunction with display devices and control of the display devices.

Web media often is played on computers rather than television displays. Although it is known to connect a computer to a television set in order to watch Web media, it is difficult to control such a system within the typical scenario for television watching where the viewer is positioned some distance from the television. Furthermore, although a wireless device can enable the user to control the television from a distance, it can be difficult to view a web browser display on the television set and may interfere with normal television program viewing by other persons.

Given the desire to watch various World Wide Web media on a family's primary television set, and to control this operation from the comfort of one's couch, there is a need to operate a television set or other display remotely from a personal computing device, such as a mobile phone. It also is desirable to allow a user to perform a general Web search to locate and capture Web media, and to control a television or other display remotely using the personal computing device.

SUMMARY

Various aspects of the invention are set forth in the claims.

For example, according to one aspect, a system for presenting and controlling content on a display device includes a network, a server system coupled to the network and comprising one or more servers, a display device coupled to the network and having a display, and a personal computing device operable to transmit a first message according to a specified format over the network to the server system. The server system stores an association between the personal computing device and the display device. The first message identifies user-selected content and a media player to play the content. The server system is operable, in response to receiving the first message from the personal computing device, to provide to the display device a second message identifying the user-selected content and

2

a first media player needed to play the content, to load the media player and to present the content on the display.

In some implementations, the display device is operable, in response to receiving the second message, to obtain the first media player from the content provider only if the first media player is not already loaded in the display device.

In some implementations, the personal computing device is operable to transmit a message according to a specified format over the network to the server system. The message can include a command for controlling playing of the content on the display device. The server system is operable, in response to receiving the message, to convert the command into a corresponding command recognizable by the media player if the command received from the personal computing device is not recognizable by the media player. The server system is operable to provide to the display device a message that includes the corresponding command, and the display device is operable, in response to receiving the message from the server system, to execute the command.

In some implementations, the personal computing device is, for example, a mobile phone, and the display device is a television set. Other personal computing devices or display devices can be used in other implementations. The network can include, for example, the Internet.

In some implementations, the server system stores a look-up table that includes a synchronization code uniquely associated with the display device. A message from the personal computing device can include the synchronization code, and in response to receiving the message from personal computing device, the server system can use the synchronization code and the look-up table to identify the display device on which the content is to be played. The synchronization code can be different from an IP address associated with the display device and/or a media access control address associated with the display device.

In various implementations, the system can facilitate allowing a personal computing device to be used to select different content to be played on a remote display even if different media players are required to present the different content. The system also can allow the user to control how the content is displayed on the display device using the personal computing device. For example, user-initiated play commands can be passed from the user's personal computing device, through the server system, to the display devices.

Other aspects, features and advantages will be apparent from the following detailed description, the accompanying drawings, and the claims.

BRIEF DESCRIPTION OF THE FIGURES

The present technology is illustrated by way of example, and not by way of limitation, in the figures of the accompanying drawings.

FIG. 1 is a block diagram illustrating an example of a system according to the invention.

FIG. 2 illustrates various details of the flow of information and signals according to some implementations.

FIG. 3 illustrates an example of a transmission code incorporated into a message from a personal computing device.

FIG. 4 illustrates an example of a look-up table that forms part of a server system.

FIG. 5 illustrates an example of entries in a universal API adapter.