UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ROKU, INC.,
Petitioner,

v.

UNIVERSAL ELECTRONICS, INC.,
Patent Owner.

Case No. IPR2021-00261
U.S. Patent No. 7,969,514

DECLARATION OF JOHN TINSMAN IN SUPPORT OF PETITIONER'S OPPOSITION TO PATENT OWNER'S REVISED MOTION TO AMEND

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I, John Tinsman, declare as follows:

I. INTRODUCTION

1. I have been retained by Sterne, Kessler, Goldstein & Fox P.L.L.C. on behalf of Roku, Inc. ("Roku") to provide this Declaration concerning technical subject matter relevant to the *inter partes* review of U.S. Patent No. 7,969,514 ("the '514 Patent"), which is entitled "System and Method for Simplified Setup of a Universal Remote Control."

2. I previously submitted a first declaration (EX1003) in support of the Petitioner for *inter partes* review proceeding IPR2021-00261. Additionally, I submitted a second declaration (EX1034) in support of Petitioner's Opposition to Patent Owner's Motion to Amend. This present Declaration (EX1044) is in support of Petitioner's Opposition to Patent Owner's Revised Motion to Amend.

3. I understand that Patent Owner submitted a Non-Contingent Motion to Amend ("MTA") on October 1, 2021. In the MTA, Patent Owner proposed to substitute claims 21-23 in place of issued claims 1, 2, and 4 of the '514 patent. MTA, 3-4. In response to the MTA, I understand that Petitioner submitted an Opposition to the MTA on December 22, 2021 along with my second declaration (EX1034). Subsequently, I understand that the Board provided Preliminary Guidance on the MTA on January 18, 2022. I understand that Patent Owner then submitted a Revised Motion to Amend ("Revised MTA") on February 7, 2022. In the Revised MTA,

Patent Owner further amended the claims. Revised MTA, Appendix A. In support of the Revised MTA, I understand Patent Owner also submitted a second declaration from Dr. Craig Rosenberg (EX2005). I have been asked to provide my technical review, analysis, insights, and opinions about the revised substitute claims.

4. My background and qualifications were provided in paragraphs 6-23 of my first declaration, EX1003, and my CV was provided as EX1004. My statements in my first and second declarations regarding my review of the '514 patent and related materials remain unchanged. In reaching my opinions in this declaration, I reviewed the Preliminary Guidance, the Revised MTA, Dr. Craig Rosenberg's second declaration (EX2005), as well as the materials reviewed as part of my first and second declarations. I also reviewed the exhibits listed in the table below:

Exhibit #	***Description***
1001	U.S. Patent No. 7,969,514 to Haughawout et al. ("'514 patent")
1002	Prosecution History of U.S. Patent No. 7,969,514 ("'514 Prosecution History")
1003	Declaration of John Tinsman in Support of Petition for *Inter Partes* Review of U.S. Patent No. 7,969,514 ("Tinsman Decl.")
1004	Curriculum Vitae of John Tinsman
1005	U.S. Patent No. 7,671,758 to Seidel et al. ("Seidel")
1006	U.S. Patent No. 7,562,128 to Caris et al. ("Caris")
1007	U.S. Patent Publication No. 2005/0110651 to Martis et al. ("Martis")
1008	International Publication No. WO 00/34851 to Martis et al. ("Martis851")
1009	U.S. Patent No. 6,650,248 to O'Donnell et al. ("O'Donnell")
1011	Prosecution History of U.S. Patent No. 7,907,222 ("'222 Prosecution History")

Exhibit #	*Description*
1012	"Digital Network Recorder SVR-2000 – Setup Guide," Sony Corporation (2000) ("SVR-2000")
1013	"TiVo Installation Guide – Series 2 Digital Video Recorder," archived by web.archive.org on April 2, 2005, with Affidavit of Elizabeth Rosenberg attached ("TiVo")
1014	U.S. Patent No. 6,211,870 to Foster ("Foster")
1015	U.S. Patent No. 7,375,673 to Spilo ("Spilo")
1016	U.S. Patent No. 9,792,133 to Lee et al. ("Lee")
1017	U.S. Patent No. 6,597,374 to Baker ("Baker")
1018	U.S. Patent No. 5,835,156 to Blonstein ("Blonstein")
1019	U.S. Patent No. 8,854,192 to Harris ("Harris")
1020	U.S. Patent Application Publication No. 2004/0075602 to Griesau ("Griesau602")
1021	U.S. Patent Application Publication No. 2004/0257239 to Griesau ("Griesau239")
1034	Declaration of John Tinsman in Support of Petitioner's Opposition to Patent Owner's Motion to Amend
1035	Transcript of the Deposition of Dr. Craig Rosenberg, IPR2021-00261 (Dated December 16, 2021).
1038	U.S. Patent No. 10,600,317 to Haughawout et al. ("'317 patent")
1039	"Digital Network Recorder SVR-3000 – Installation Guide," Sony Electronics Inc. (2002) ("SVR-3000")
1041	U.S. Patent Publication No. 2003/0141987 to Hayes ("Hayes")
1042	U.S. Patent No. 7,046,161 to Hayes ("Hayes Patent")
1043	Transcript of the Deposition of Dr. Craig Rosenberg, IPR2021-00261 (Dated March 16, 2022).

II. BACKGROUND OF THE TECHNOLOGY

5. Based on my review of revised substitute claims 21-23, I believe that the claims as amended continue to recite well-known and conventional processes that were well-known in the art. In my previous first and second declarations, I

provided Background of the Technology sections which detailed well-known remote control programming process described in the art. EX1003, ¶¶65-108; EX1034, ¶¶5-69. I have included some of that discussion here as well in view of the well-known and conventional codeset and remote control testing processes mentioned in substitute claims 21-23.

6. I understand that analyzing the state of electronic consumer device control during the years prior to the earliest possible priority date of September 8, 2005 can provide valuable insight into what a person of ordinary skill in the art ("POSA") was aware of at the time.

7. Prior to the priority date of the '514 Patent and the '962 application (EX1011 cited in the Revised MTA, MTA, and Dr. Rosenberg's first and second declarations), all the technology at issue was broadly applied and well known by developers in the electronic consumer device and remote control industry in general. No individual elements of substitute claims 21-23 were novel at the time of the alleged invention, and there was nothing novel about the manner in which those elements were combined in the claims. Further, there were no technological barriers to combining these elements to form the claimed invention. Indeed, combining these elements would have yielded predictable results. Thus, the concept of setting up a controlling electronic device to control multiple appliances using a series of displayed instructions, prompts, and remote control setup numbers was well known

prior to September 8, 2005. Below, I discuss this, and the other claimed technological aspects, in the prior art.

A. Infrared Remote Controls and Remote Control Configuration to Control Multiple Electronic Consumer Devices Were Well Known

8. The handheld remote control is one of the most ubiquitous devices in the world. Original remote controls were flashlight-like devices aimed at the corners of a television screen. Later, ultrasonic remote controls were developed. They worked by striking an aluminum bar, and created an audible clicking sound when pressed. This is why, even today, remote controls are sometimes called "clickers."

9. Eventually infrared remote controls were developed. Drawing on the facts that near-infrared light behaves like normal light, is invisible to humans, and is easily and efficiently generated by diodes, they soon became the dominant technology for handheld remote controls. The diodes used to create infrared light are called infrared emitting diodes, or IRLEDs, and are quite similar to the more familiar light emitting diodes, or LEDs. An IRLED is an LED that emits near-infrared light instead of visible light.

10. Infrared remote controls were in nearly ubiquitous usage before the priority date of September 8, 2005. I was employed by OpenTV Inc. at that time and we were very familiar with the technology.

11. In addition, many prior art references disclose infrared remote controls.

For example, U.S. Patent No. 9,792,133 to Lee ("Lee") discloses a remote control device that transmits an infrared (IR) signal to an electronic consumer device such that the electronic consumer device is controlled to perform desired functions. EX1016, Lee, 3:48-57. Further, U.S. Patent No. 6,597,374 to Baker ("Baker") discloses "[r]emote control units, such as for televisions, have been available to consumers for many years. Commonly, these control units operate by generating an infrared (IR) beam of light with controlled parameters that can transfer a plurality of commands." EX1017, Baker, 1:9-13.

12. Similarly, U.S. Patent No. 5,835,156 to Blonstein (EX1018, "Blonstein"), U.S. Patent No. 8,854,192 to Harris (EX1019, "Harris"), U.S. Patent Application Publication No. 2004/0075602 to Griesau (EX1020, "Griesau602"), U.S. Patent Application Publication No. 2004/0257239 to Griesau (EX1021, "Griesau239"), U.S. Patent No. 7,375,673 to Spilo (EX1015, "Spilo"), and Digital Network Recorder SVR-2000 Setup Guide (EX1012, "SVR-2000") also disclose IR remote controls that transmit IR signals to control other devices.

B. Universal Remote Controls Were Well Known

13. As admitted in the "Background" section of the '514 Patent, "universal remote controls for commanding various functions of various types of appliances of various manufacturers" were already "quite widespread." EX1001, 1:28-31. These universal remote controls were developed "[t]o minimize the number of individual

remote controls a user requires." *Id.*, 1:26-28.

14. Many prior art references also disclose universal remote controls. For example, U.S. Pat. No. 7,671,758 to Seidel (EX1005, "Seidel") discloses that "[u]niversal remote controls are designed to generate a variety of signals to support the broadest range of devices." EX1005, 1:55-57. Seidel further explains that "universal remote controls have gained in popularity" because "many consumers wish to minimize the amount of remote controls needed to operate components in their entertainment center." *Id.*, 1:49-52. U.S. Pat. Publication No. 2005/0110651 to Martis (EX1007, "Martis") further confirms this understanding and also discloses a system that "enable[s] a remote control device to control a number of different consumer electronic devices." EX1007, Abstract; *see also* EX1008, Abstract. Baker also discloses "[a] remote control for controlling a plurality of controllable devices." EX1017, 2:24-26. Baker acknowledges that "a universal remote control is designed to work with many different components or controllable devices." *Id.*, 1:48-51.

15. Additionally, Lee, Blonstein, Harris, Griesau602, Griesau239, Spilo, U.S. Pat. No. 7,562,128 to Caris (EX1006, "Caris"), U.S. Pat. No. 6,650,248 to O'Donnell (EX1009, "O'Donnell"), and SONY are few among many, which disclose universal remote controls that are capable of commanding functions of multiple controllable appliances. *See, e.g.*, EX1009, Abstract; *see also* EX1016; EX1018; EX1019; EX1021; EX1020; EX1015; EX1006; EX1012.

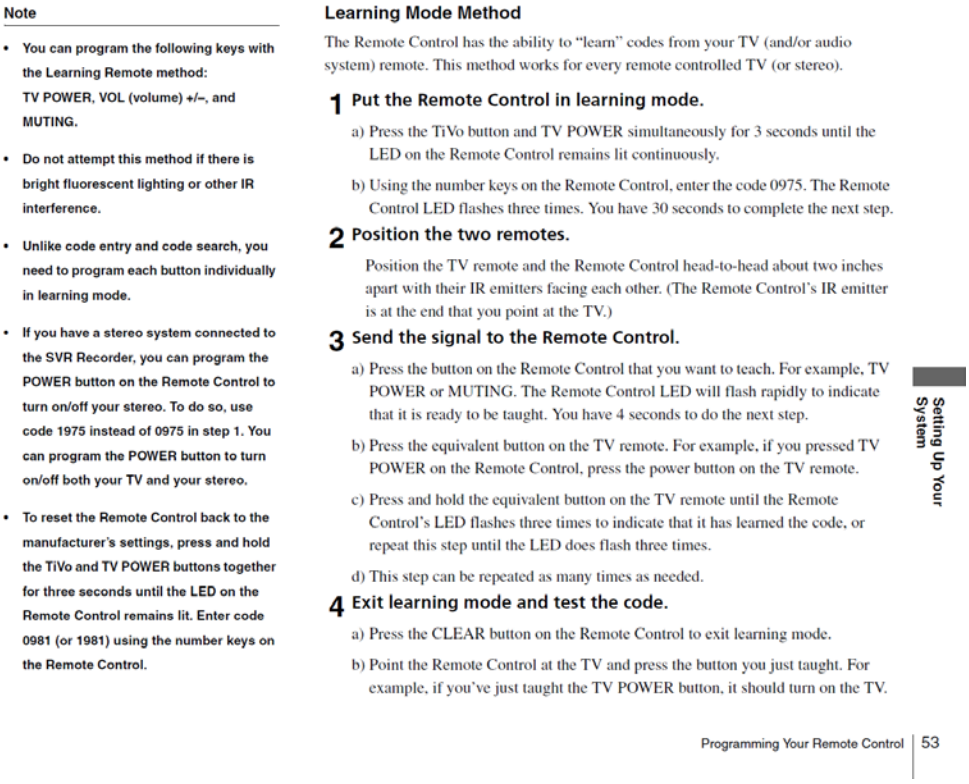
C. Configuring a Universal Remote Control to Control Multiple Appliances Was Well Known

16. In the "Background" section of the '514 Patent, the '514 Patent explains that configuring a universal remote control was already a well-known process. EX1001, 1:34-50. For example, the '514 Patent describes configuring a universal remote control by learning "from a remote control supplied by the manufacturer with that appliance." *Id.*, 1:34-37. The '514 Patent also discloses preprogramming a remote control with codes to command "functions of appliances of various types and various manufacturers." *Id.*, 1:39-42. "The user then interacts with the universal remote control to identify to the universal remote control which appliance(s) the user desires to command." *Id.*, 1:42-44. In this manner, the '514 Patent confirms that it was well known to configure a universal remote control to control multiple appliances.

17. Several other prior art references also demonstrate that it was well known to configure remote controls. For example, Seidel discloses that "a learning universal remote control may capture and copy the IR codes produced by another remote control issuing a command." EX1005, 2:22-24. A user typically configures a learning universal remote control by multiple steps. *See id.*, 2:24-31. Additionally, Seidel discloses that "a user [] configure[s] the pre-programmed universal remote control by indicating which remote control to emulate by entering in the specific

mode code … that is assigned to the particular remote control." *Id.*, 2:1-6.

18. SVR-2000 also discloses configuring a universal remote control. As reproduced below, SVR-2000 discloses a "learning mode method" that configures the remote control to learn codes from a TV remote. EX1012, 0053. In addition, SVR-2000 discloses steps to configure the remote by entering a remote control code. *Id.*, 0051-0052.



Note

- **You can program the following keys with the Learning Remote method: TV POWER, VOL (volume) +/–, and MUTING.**
- **Do not attempt this method if there is bright fluorescent lighting or other IR interference.**
- **Unlike code entry and code search, you need to program each button individually in learning mode.**
- **If you have a stereo system connected to the SVR Recorder, you can program the POWER button on the Remote Control to turn on/off your stereo. To do so, use code 1975 instead of 0975 in step 1. You can program the POWER button to turn on/off both your TV and your stereo.**
- **To reset the Remote Control back to the manufacturer's settings, press and hold the TiVo and TV POWER buttons together for three seconds until the LED on the Remote Control remains lit. Enter code 0981 (or 1981) using the number keys on the Remote Control.**

Learning Mode Method

The Remote Control has the ability to "learn" codes from your TV (and/or audio system) remote. This method works for every remote controlled TV (or stereo).

1 Put the Remote Control in learning mode.

a) Press the TiVo button and TV POWER simultaneously for 3 seconds until the LED on the Remote Control remains lit continuously.

b) Using the number keys on the Remote Control, enter the code 0975. The Remote Control LED flashes three times. You have 30 seconds to complete the next step.

2 Position the two remotes.

Position the TV remote and the Remote Control head-to-head about two inches apart with their IR emitters facing each other. (The Remote Control's IR emitter is at the end that you point at the TV.)

3 Send the signal to the Remote Control.

a) Press the button on the Remote Control that you want to teach. For example, TV POWER or MUTING. The Remote Control LED will flash rapidly to indicate that it is ready to be taught. You have 4 seconds to do the next step.

b) Press the equivalent button on the TV remote. For example, if you pressed TV POWER on the Remote Control, press the power button on the TV remote.

c) Press and hold the equivalent button on the TV remote until the Remote Control's LED flashes three times to indicate that it has learned the code, or repeat this step until the LED does flash three times.

d) This step can be repeated as many times as needed.

4 Exit learning mode and test the code.

a) Press the CLEAR button on the Remote Control to exit learning mode.

b) Point the Remote Control at the TV and press the button you just taught. For example, if you've just taught the TV POWER button, it should turn on the TV.

Setting Up Your System

Programming Your Remote Control | 53

EX1012, 0053.

Note

- **In this method, when you find the correct code, it will automatically program the TV POWER, VOL +/–, and MUTING buttons on the Remote Control.**
- **If you have a stereo system connected to the SVR Recorder, you can program the POWER button on the Remote Control to turn on and off both the stereo and your TV. To do so, use code 1999 instead of 0999 in step 1.**
- **To reset the Remote Control back to the manufacturer's settings, press and hold the TiVo and TV POWER buttons together for three seconds until the LED on the Remote Control remains lit. Enter code 0981 (or 1981) using the number keys on the Remote Control.**

Code Search Method

Another method of programming the Remote Control to operate your TV and/or stereo system is the code search method. The Remote Control has hundreds of available codes. The correct code for your TV might be available, yet not listed on the screen for your TV brand.

1 Put the Remote Control in code search mode.

a) Press the TiVo button and TV POWER simultaneously for three seconds until the LED on the Remote Control remains lit continuously.

b) Release the buttons and the LED remains illuminated.

c) Using the number keys on the Remote Control, enter the code 0999.

2 Test the code.

a) Point the Remote Control at the TV, press TV POWER and see if the TV turns off or on.

b) If the TV does turn off or on, confirm that MUTE and VOL (volume) +/– also operate the TV. If they do, go to step 4 below. If they do not, continue with step 3.

3 Try another code.

Continue to cycle through each code by pressing CH+, then test the code by repeating step 2 above. Remember, there are hundreds of codes. If the LED goes out. you have reached the end of the codes.

4 Program the Remote Control with the correct code.

a) When the code allows the Remote Control to operate the TV power, volume and muting, press ENTER to set the code and exit Code Search mode.

b) You can also press CLEAR to exit Code Search mode without setting a new code.

EX1012, 0054.

19. Similar to SVR-2000, the TiVo Installation Guide – Series 2 Digital Video Recorder (EX1013, "TiVo") discloses multiple steps for configuring a remote control. The user is prompted to select the brand of TV or A/V receiver. EX1013, 0054. Subsequently, a code corresponding to the selected device is shown to the user. *Id.* When the user enters the code on the remote control, the remote control is configured for controlling the selected device. *Id.*, 0055.

20. Baker also discloses similar steps for configuring a remote control.

Baker explains that "the user selects the type of the controllable device" and "the brand of the controllable device." EX1017, 8:26-27, 8:32-33. A "best code set" is then determined and tested for configuring the remote control. *Id.*, 8:49-9:9.

21. Further, Caris discloses that a user conventionally programs a remote by looking up and entering codes into the remote. EX1006, 3:28-37. Caris also discloses programing the remote via an IR or RF blaster. *Id.*, 6:4-5.

22. Griesau239 provides another example and discloses "a method for programming a remote control unit and a device which performs the function of remotely controlling a plurality of devices." EX1021, ¶24. Similarly, Griesau602 also discloses:

> [A] method of programming the universal remote control unit to operate in either a plurality of operating modes for remotely controlling a plurality of devices with each of the plurality of operating modes corresponding to a different one of the plurality of devices, or operating in a single operating mode to control a single device.

EX1020, ¶38.

23. In addition to the references that I have recited above, Lee, Blonstein, Foster, and Spilo also disclose configuring a universal remote control. *See* EX1016, 5:12-37; EX1015, 1:12-21; *see generally* EX1014, EX1018. Therefore, configuring a remote control was well known before the earliest priority date of the '514 Patent.

D. Displaying Instructions and Prompts to a User for Configuring a Remote Control Was Well Known

24. As previously discussed, the ’514 Patent explains that configuring a universal remote control to control multiple electronic consumer devices using an appliance or brand code was well-known. *See* EX1001, 1:34-42. Similarly, using an electronic consumer device, such as a set-top box, to display instructions and prompts to a user for the purpose of configuring a remote control was also well-known.

25. Many prior art references disclosed this feature. For example, Seidel describes a system including a set-up control unit 110 and a TV 130 that operate to configure a remote control 120. *See* EX1005, FIG. 1.

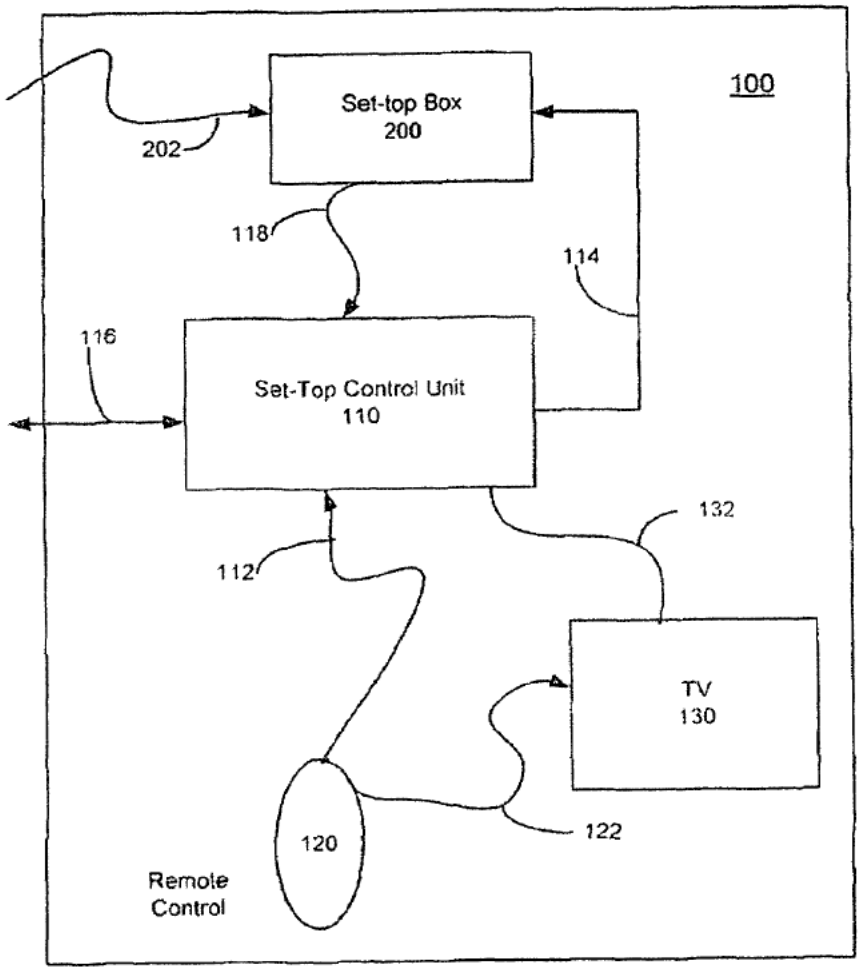


Fig. 1

EX1005, FIG. 1.

26. Similar to the ’514 Patent, Seidel describes the programming of the remote control by interacting with the set-top control unit and the TV via the display of instructions. For example, Seidel explains that:

> [S]et-top unit 110 may interact with the user to improve the accuracy, efficiency and/or simplicity of detecting the particular mode code. In

> an embodiment, set-top control unit 110 may assist the determination of step 630 by eliminating one or more mode codes from the set of candidate mode codes being considered based on the brand of the device that the user wishes to control. In such an embodiment, ***set-top control unit 110 may display information on a display (such as TV 130) that instructs a user to select a brand of the device the user wishes to control with the target remote control***.

EX1005, 13:48-58 (emphasis added).

27. Specifically, to detect "the particular mode code," like the '514 Patent, the "set-top control unit 110 may display information on a display (such as TV 130) that instructs a user to select a brand of the device." *Id.*, 13:54-58. For example, the "set-top control unit 110 may display a list of brands on TV 130, and the user may use the target remote control to select one of the brands." *Id.*, 13:58-60. "Once the set-top control unit 110 receives an input signal from a remote control that identifies a selected brand, the set-top control unit 110 may narrow its search of potential mode codes that correspond to that brand . . . ." *Id.*, 13:60-64. Therefore, a POSA would have understood that the set-top control unit determines "the particular mode code" based on a user input transmitted by the remote control.

28. After the mode code is determined, the set-up control unit "display[s] instructions on the TV to instruct the user on how to program target remote control using the mode code." *Id.*, 12:61-65. The user then enters the mode code by pressing

the corresponding digits on the target remote control. *Id.*, 12:67-13:5. "When the user enters the digits of the mode code in conjunction with other remote control-specific key presses (used to configure the target remote control with the mode code), the target remote control is programmed to emulate the specific remote control functionality indicated by the mode code." *Id.* In this manner, Seidel demonstrates that it was well known to display instructions and prompts to aid a user in configuring a remote control.

29. Martis also discloses this feature. To enable a remote control unit (RCU) 12 to control multiple devices, Martis describes system 16 "prompt[ing] the user to input information about the devices which the user wishes to have the RCU [12] control." EX1007, ¶15. System 16 uses the "setup software 26, which may be resident on the system 16" to configure RCU 12 using a "configuration menu." *Id.*, ¶¶19, 22. The configuration menu "may allow the user to input the type of devices which the user wishes to automatically control using the RCU 12." *Id.*, ¶¶22, 25. Figures 3A-3C depict graphical user interfaces displaying different configuration menu screens.

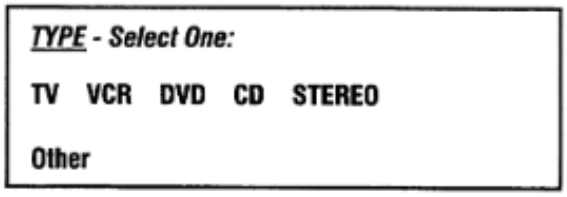


FIG. 3A

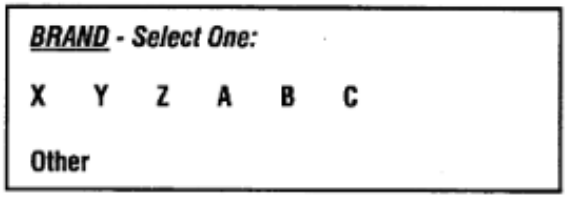


FIG. 3B

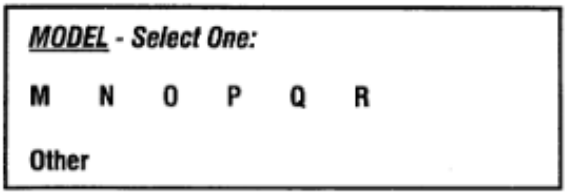


FIG. 3C

EX1007, FIGs. 3A-3C.

30. Figure 3A, for example, is "a graphical user interface, displayed on the television receiver 18, [that] may ask the user to input the type of device, be it a TV, a VCR, a DVD player, a CD player or a stereo system." *Id.*, ¶22. After receiving a device selection, system 16 displays the graphical user interface illustrated in Figure 3B, which is "a list of common manufacturers of the type of device selected." *Id.*, ¶23. Upon receiving a manufacturer selection, system 16 presents the graphical user interface from Figure 3C, which "ask[s] the user to select from among the models available for the given type of device and the selected manufacturer." *Id.*, ¶24.

31. Using these selections, the system 16 identifies matching "remote control codes" from a database. *Id.*, ¶27. The system 16 then sends the appropriate signal information and protocols to RCU 12 to configure RCU 12 to control the selected device. *Id.*, ¶¶27, 40. Thus, Martis also describes displaying instructions and prompts to aid a user in configuring a remote control.

32. Similar to Seidel and Martis, SVR-2000 also discloses set-top boxes that guide the user through the set up process. EX1012, 0041. SVR-2000 discloses "steps to set up your Remote Control using the on-screen code entry method." *Id*., 0051. For example, the steps includes "[i]dentify your TV" prompts the user to choose a TV brand using buttons of the remote control. *Id.* A list of TV brands is shown on screen of the TV so that the user can navigate through the list using buttons of the remote control. *Id.*

Programming Your Remote Control

You can set your Remote Control to control your TV's power, muting, and volume by using the "Remote Control Setup" option on the **Messages & Setup** screen. Or you can set your Remote Control to control the volume on your stereo if you have it connected to your TV.

Once you've followed these steps to tell your Remote Control how to control your TV, you'll be able to put away your TV's remote and use the Remote Control from now on. You'll only need your VCR's remote for watching videotapes.

Follow these steps to set up your Remote Control using the on-screen code entry method. If this method doesn't work, try the Learning Mode Method (page 53) or Code Search Method (page 54) methods.

1 Start at TiVo Central.

Press the TiVo button to go to TiVo Central.

2 Navigate to SVR Remote - TV.

Choose "Messages & Setup", then "SVR Remote Setup", then "SVR Remote - TV".

3 Identify your TV.

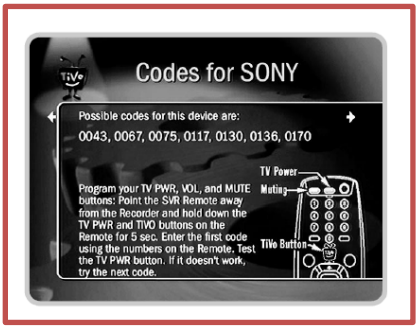
Use the CH (Channel) +/– buttons to scroll down the list of TV brands page by page, choose your TV brand from the list, and press SELECT. If you have been using a TV remote control other than the one that came with your TV, select your TV brand, not the brand of the remote.

EX1012, 0051 (annotated).

EX1012, 0051.

33. When the user selects the TV brand, the user "will see a screen with one or more four-digit codes for [the user's] TV." EX1012. 0052. The user may "[u]se the number keys on [the] remote control to enter the four-digit code." *Id.* The

user can "[t]est the code by pointing [the] remote control in the direction of the TV and pressing the TV POWER button." *Id.* If this turns the TV off, the correct code has been found. *Id.*



Note

If you have your stereo hooked up to your TV, you can program the Remote Control's VOL (volume) and MUTING buttons to send signals to your stereo rather than to your TV. Go to "Messages & Setup", then "SVR Remote Setup", then "SVR Remote - TV". Press the TiVo and VOL buttons to illuminate the LED before you enter the code.

4 Enter the Remote Control code.

When you select your TV brand, you will see a screen with one or more four-digit codes for your TV.

a) Cover the end of the Remote Control with your hand to shield the IR Emitter.

b) On the Remote Control, press and hold the TiVo and TV POWER buttons simultaneously for about three seconds, until the remote's LED illuminates. Release the buttons and the LED will remain illuminated.

c) Use the number keys on your Remote Control to enter the four-digit code you want to test (start with the first code in the list on the screen).

d) After pressing the fourth digit of the code, the LED will flash three times, indicating that you entered a valid code.

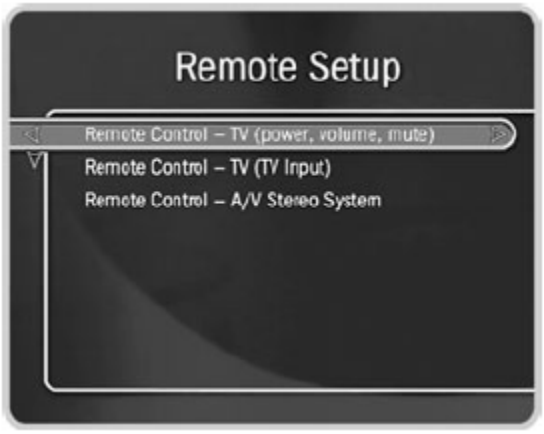
e) Test the code by pointing your Remote Control in the direction of the TV and pressing the TV POWER button. If this turns the TV off, you have found the correct code. Now you can use the Remote Control to turn your TV on and off, control volume, and mute the sound.

f) If the Remote Control could not turn your TV off, try the next code listed for your TV.

EX1012, 0052 (annotated).

EX1012, 0052.

34. Similarly, TiVo discloses displaying instructions for the user to configure the remote control. The user starts with selecting device/functions to control. EX1013, 0054. As shown below, the instruction of selecting among three combination of device and functions are displayed to the user.



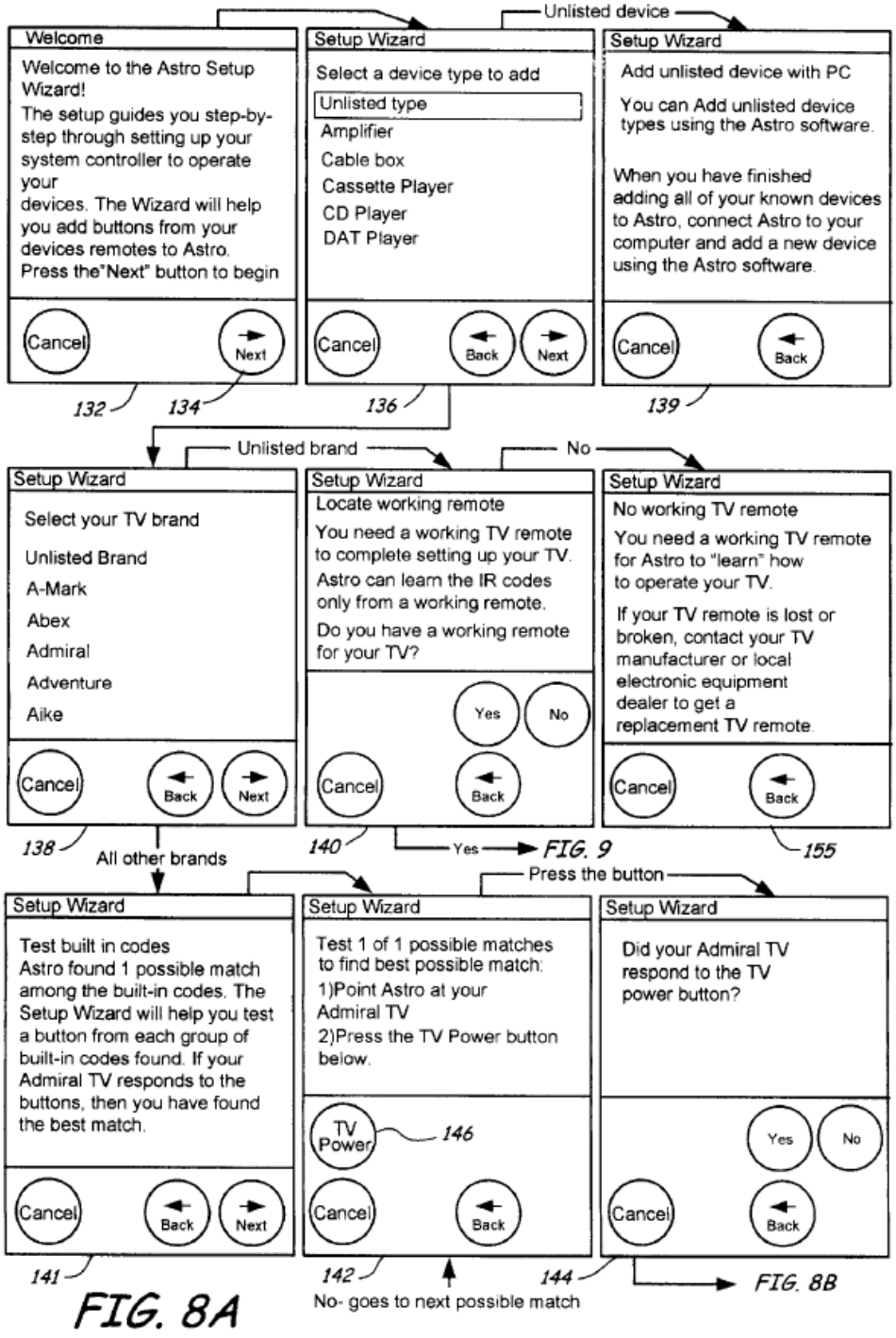
EX1013, 0054.

35. Next, the user is prompted with a display for selecting the brand of the device to be controlled. *Id.* After the selection, four-digit codes corresponding to the user selection are displayed. *Id.* The user is instructed to enter and test the four-digit code using the remote control. *Id.*, 0055.

EX1013, 0054.

EX1013, 0054.

36. In addition, Baker also discloses multiple steps and screens that are displayed for a user to configure the remote control. As shown below, "[a]t step 132, the user is provided with an initial screen provided by a setup program module stored in the memory 34." EX1017, 8:1-3. "At step 136, the user selects the type of the controllable device." *Id.*, 8:26-27. "Assuming a device is found at step 136, the user selects the brand of the controllable device at step 138." *Id.*, 8:32-33. "Once the type of component and brand have been determined in steps 136 and 138, the user is presented with a series of screens in order to identify the correct code set from the database of code sets 37 stored in the memory 34." *Id.*, 8:39-42. The identified code is then tested with the user's interactions. *Id.*, 8:61-9:9. The steps mentioned above are displayed for the user in a display. *Id.*, 7:58-60. Therefore, Baker describes displaying to the user instructions for configuring the remote control.



EX1017, FIG. 8A.

37. For another example, Griesau239 discloses "displaying (for example, on the television screen or LCD of the remote control unit) the associated codes for

the database records which have the corresponding manufacturer code." EX1021, ¶42. The user then selects and enters one of the displayed codes. *Id.*, ¶44. Griesau239 also discloses that "[i]f the select and mute buttons have been concurrently . . . . held for the predetermined period of time . . . the light emitting diodes (LED) on the remote control device . . . blink[s] for a period of time." *Id.*, ¶38. After blinking of the buttons, the remote control device monitors if the user presses a key on the remote control device. *Id.* A POSA would have understood that the blinking of the buttons instructs the user to press a key.

38. Similarly, Griesau602 discloses that "[i]f the cable and mute buttons have been simultaneously actuated for at least three seconds (YES in step 106), the cable button illuminates (step 108)." EX1020, ¶39. After the cable button illuminates, the remote control device monitors if the user actuate another button. *Id.*, ¶40. A POSA would have understood that the cable button illumination also instructs the user to actuate another button.

39. Yet another example is that Spilo discloses multiple steps of configuring a remote control as shown below in Figure 2 of Spilo. In step 202, "[t]he controller prompts a user to select a device type for identification." EX1015, 8:55-56. "The controller may do this by using a television set attached to the controller, a computer or video monitor, or using the controller's display 116." *Id.*, 8:56-59. In addition, in step 208, "the user is asked to test the newly identified protocol." *Id.*,

10:12-13. "[T]he user is prompted to input a command at controller remote 110, and determine whether the command had the desired effect on the device." *Id.*, 10:15-18.

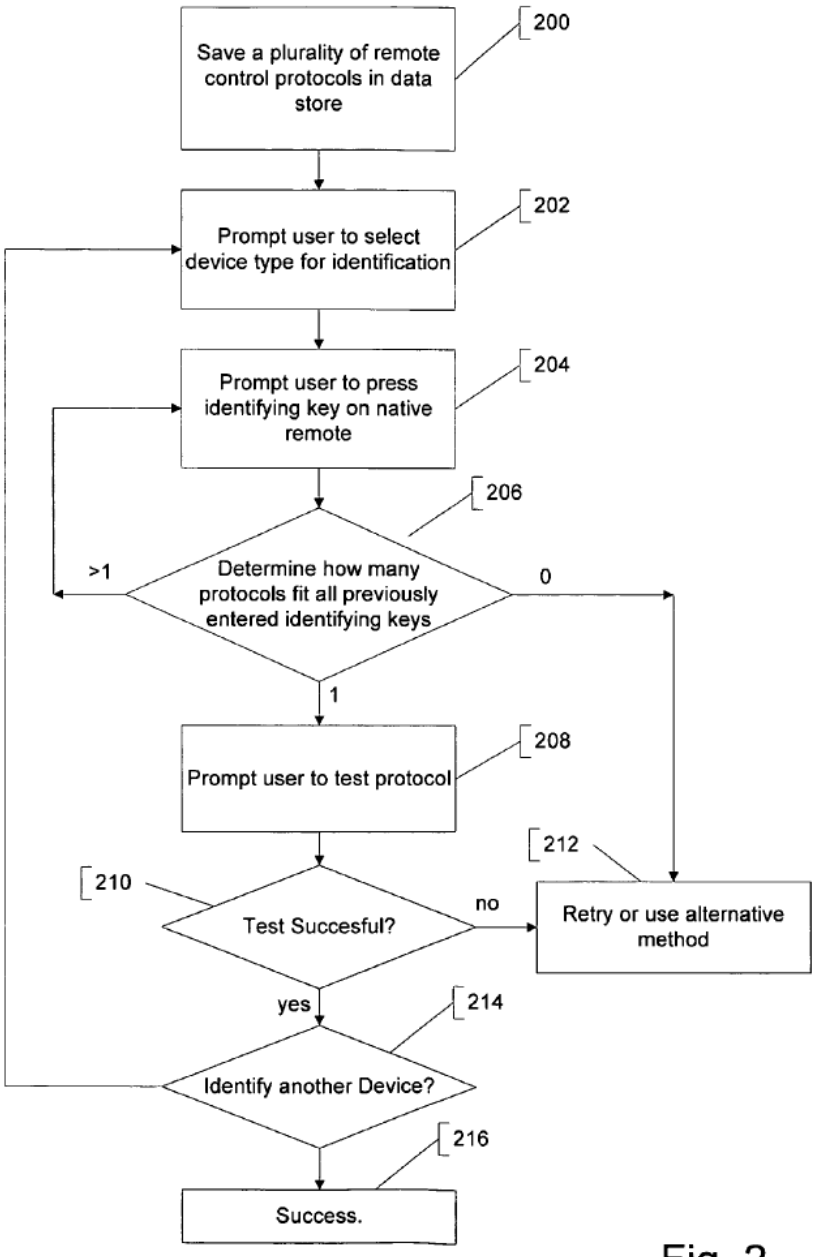


Fig. 2

EX1015, FIG. 2.

40. Finally, Lee also discloses displaying instructions to the user for configuring the remote control. EX1016, 17:28-60, 18:35-46. As seen from these references, displaying instructions and prompts to configure a remote control in order to control multiple electronic consumer devices was well-known before the earliest priority date of the ’514 Patent.

E. Identifying and Displaying a Remote Control Code Used to Configure a Remote Control Was Well Known

41. In the “Background” section of the ’514 Patent, the ’514 Patent admits that a user manually entering an appliance or brand code to configure a universal remote control was known. EX1001, 1:42-50. Further, identifying and displaying this code was a well-known technique.

42. For example, Seidel discloses identifying and displaying a “mode code” based on a brand selected by the user. As I discussed above, Seidel discloses that set-top control unit 110 displays instructional information on a display like TV 130 that “instructs a user to select a brand of the device the user wishes to control.” EX1005, 13:54-58. Based on the user’s selection, set-top control unit 110 “narrow[s] its search of potential mode codes that correspond to that brand” and determines a mode code corresponding to the target device. *Id.*, 13:60-64. Similar to the ’514 Patent’s code, Seidel’s mode code is also a “short sequence of digits (e.g., 1, 2, 3, 4).” *Id.*, 12:65-67; *see also id.*, 1:65-2:6.

43. After the mode code is determined, the set-up control unit "display[s] instructions on the TV to instruct the user on how to program target remote control using the mode code." EX1005, 12:61-65. The user then enters the mode code by pressing the corresponding digits on the target remote control. *Id.*, 12:67-13:5. "When the user enters the digits of the mode code in conjunction with other remote control-specific key presses (used to configure the target remote control with the mode code), the target remote control is programmed to emulate the specific remote control functionality indicated by the mode code." *Id.* In this manner, similar to the '514 Patent, Seidel's display of a mode code also teaches displaying a remote control code used to configure a remote control.

44. For another example, as I discussed above, TiVo discloses showing four-digit codes on the screen after the user has identified remote control functions and a brand of the device to be controlled. EX1013, 0054. The user then enters the appropriate code among the four-digit codes shown to configure the remote control. *Id.*, 0055.

EX1013, 0054.

45. For another example, SVR-2000 also discloses this feature. As I discussed above, after the user selects the TV brand, the user "will see a screen with one or more four-digit codes for [the user's] TV." EX1012, 0052. For example, the system identifies and displays a message indicating that the "[p]ossible codes for this device are: 0043, 0067, 0075…" *Id.* The user may "[u]se the number keys on [the] remote control to enter the four-digit code." *Id.*

46. O'Donnell also discloses displaying a "code look-up table." EX1009, 3:6-7. "Once URC program mode is entered and TV is selected as the appliance to be programmed into the URC," the menu shows two-digit codes corresponding to different TV brands. *Id.*, 3:9-22. Then the user is asked to "[e]nter the 2 digit code that corresponds to the brand selected." *Id.*, 3:21. The user then "verif[ies] that the

URC will operate [the] TV" by pressing buttons on the remote. *Id.*, 3:25-27.

"Select the brand of the TV to be controlled:
00 RCA
01 Sony
.
.
. >> Entry for all brands that can be controlled.
xx Zenith
Press and hold the TV key
Enter the 2 digit code that corresponds to the brand selected."

EX1009, 3:13-22.

47. Further, as I discussed above, Griesau239 similarly discloses that "if the three numerical key press entries do correspond to the name of a manufacturer," "the programming mode continues by displaying (for example, on the television screen or LCD of the remote control unit) the associated codes for the database records which have the corresponding manufacturer code." EX1021, ¶42. The user then selects and enters one of the displayed codes. *Id.*, ¶44. A POSA would have understood that the programming mode identifies the associated codes based on the user's numerical key press entries and displays the associated codes to the user.

48. Yet another example is that Spilo discloses identifying and displaying an identification when configuring a remote control. EX1015, 9:34-44. "If a device type is specified, the identification key is chosen from the set of identification keys associated with that device type." *Id.*, 9:35-37. "[A] picture of the identification key may be displayed on television set 101, or controller display 116." *Id.*, 9:37-39.

"[T]he user is prompted to press an identification key." *Id.*, 9:34-35.

49. As seen from these references, identifying and displaying a remote control code used to configure a remote control was a well-known technique before the earliest priority date of the '514 Patent.

F. Testing Remote Control Functionality When Configuring a Remote Control was Well Known

50. As I previously explained, SVR-2000 discloses set-top boxes that guide the user through the set up process. EX1012, 0041. SVR-2000 discloses "steps to set up your Remote Control using the on-screen code entry method." *Id*., 0051. As part of this process, the user can "[t]est the code by pointing [the] remote control in the direction of the TV and pressing the TV POWER button." *Id.* If this turns the TV off, the correct code has been found. *Id.*

EX1012, 0052.

51. SVR-2000 also describes using a Code Search Method and prompting a user to test functionality using TV POWER, MUTE, or a volume up or down to confirm proper remote control operation.

Note

- **In this method, when you find the correct code, it will automatically program the TV POWER, VOL +/–, and MUTING buttons on the Remote Control.**
- **If you have a stereo system connected to the SVR Recorder, you can program the POWER button on the Remote Control to turn on and off both the stereo and your TV. To do so, use code 1999 instead of 0999 in step 1.**
- **To reset the Remote Control back to the manufacturer's settings, press and hold the TiVo and TV POWER buttons together for three seconds until the LED on the Remote Control remains lit. Enter code 0981 (or 1981) using the number keys on the Remote Control.**

Code Search Method

Another method of programming the Remote Control to operate your TV and/or stereo system is the code search method. The Remote Control has hundreds of available codes. The correct code for your TV might be available, yet not listed on the screen for your TV brand.

1 Put the Remote Control in code search mode.

a) Press the TiVo button and TV POWER simultaneously for three seconds until the LED on the Remote Control remains lit continuously.

b) Release the buttons and the LED remains illuminated.

c) Using the number keys on the Remote Control, enter the code 0999.

2 Test the code.

a) Point the Remote Control at the TV, press TV POWER and see if the TV turns off or on.

b) If the TV does turn off or on, confirm that MUTE and VOL (volume) +/– also operate the TV. If they do, go to step 4 below. If they do not, continue with step 3.

3 Try another code.

Continue to cycle through each code by pressing CH+, then test the code by repeating step 2 above. Remember, there are hundreds of codes. If the LED goes out. you have reached the end of the codes.

4 Program the Remote Control with the correct code.

a) When the code allows the Remote Control to operate the TV power, volume and muting, press ENTER to set the code and exit Code Search mode.

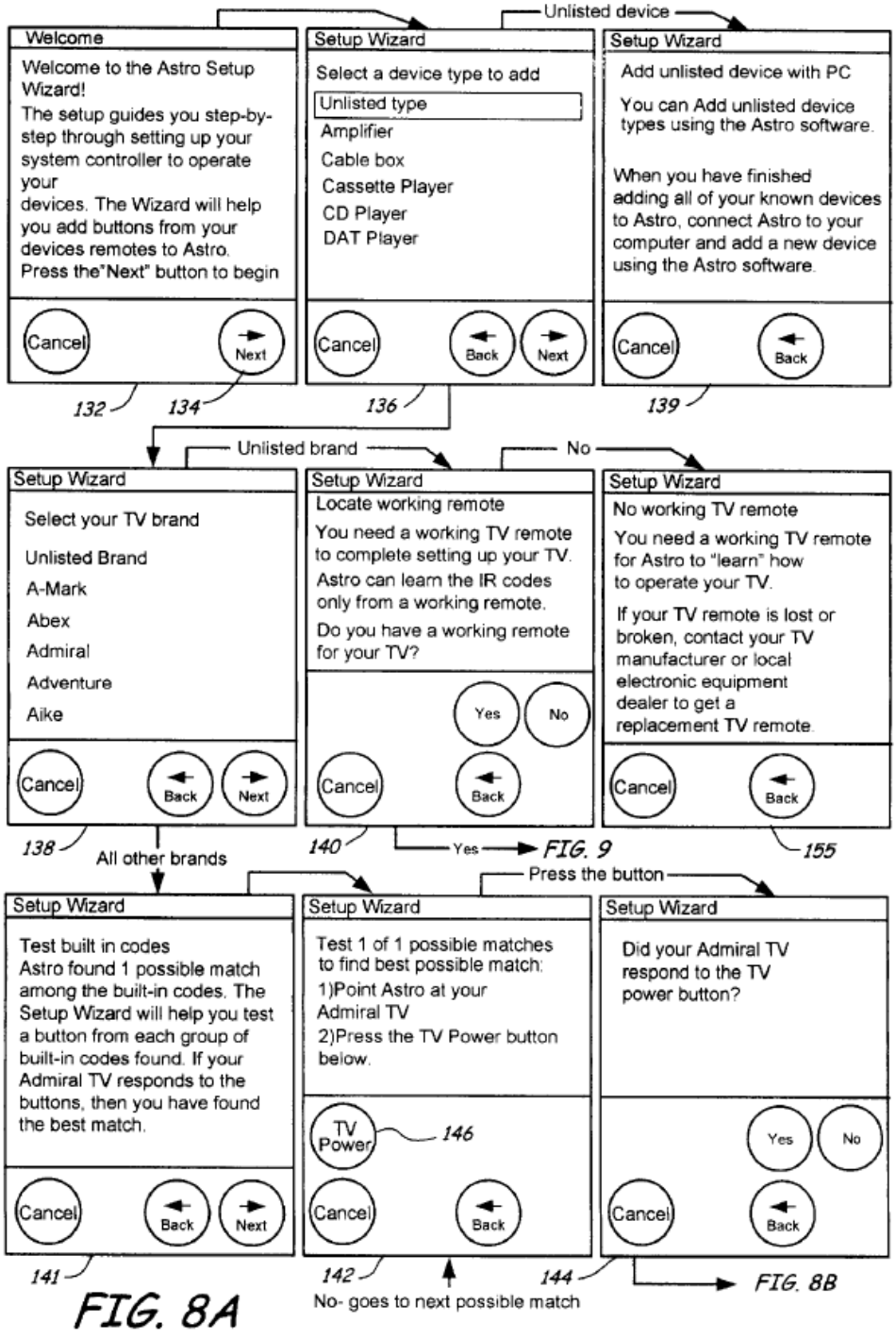
b) You can also press CLEAR to exit Code Search mode without setting a new code.

EX1012, 0054.

52. TiVo describes a similar process:

EX1013, 0054.

53. Baker also describes this testing process. "Once the type of component and brand have been determined in steps 136 and 138, the user is presented with a series of screens in order to identify the correct code set from the database of code sets 37 stored in the memory 34." EX1017, 8:39-42. The identified code is then tested with the user's interactions. *Id.*, 8:61-9:9. The steps mentioned above are displayed for the user in a display. *Id.*, 7:58-60. Baker also depicts these instructions in FIG. 8A.



EX1017, FIG. 8A.

54. Therefore, Baker describes displaying to the user instructions for configuring the remote control.

55. In another example, Spilo also describes testing to ensure that a remote has been properly configured. Spilo discloses multiple steps of configuring a remote control as shown below in Figure 2 of Spilo. In step 202, "[t]he controller prompts a user to select a device type for identification." EX1015, 8:55-56. "The controller may do this by using a television set attached to the controller, a computer or video monitor, or using the controller's display 116." *Id.*, 8:56-59. In addition, in step 208, "the user is asked to test the newly identified protocol." *Id.*, 10:12-13. "[T]he user is prompted to input a command at controller remote 110, and determine whether the command had the desired effect on the device." *Id.*, 10:15-18.

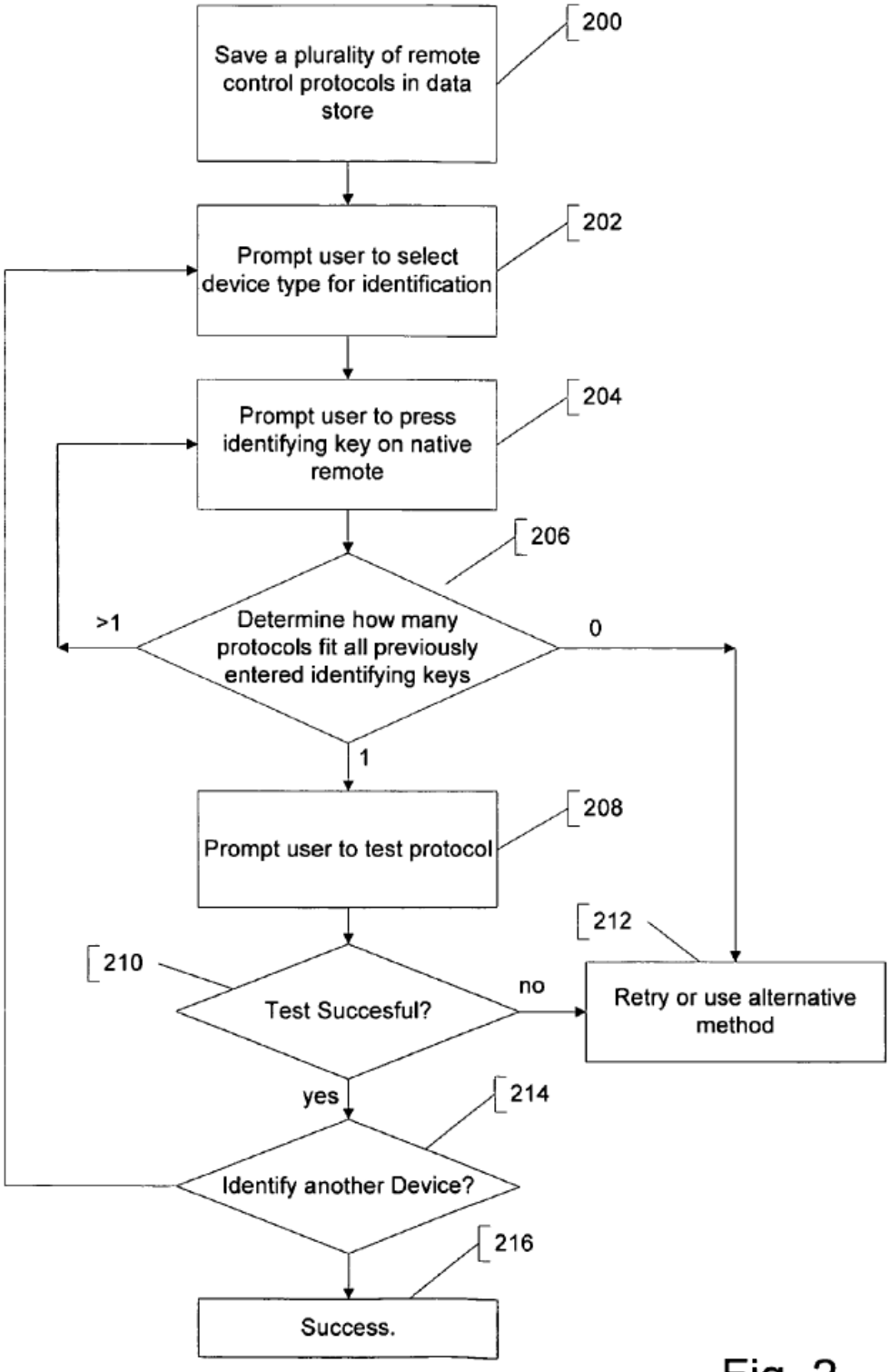


Fig. 2

EX1015, FIG. 2.

56. As seen from these references, displaying instructions for a user to test and indicate successful testing was well-known before the earliest priority date of the ’514 Patent.

G. Transmitting a Code Set to Remote Control to Configure the Remote Control was Well-Known

57. Transmitting a code set to a remote control was a well-known and conventional way to program a remote control. For example, Caris discloses that a user conventionally programs a remote by looking up and entering codes into the remote. EX1006, 3:28-37. Caris explains that a well-known solution to this troublesome process was to download remote control codes to the remote via an IR or RF blaster. *Id.*, 6:4-5.

58. Specifically, Caris describes “[a] set top box (STB) is marketed together with a programmable remote.” EX1006, Caris, Abstract. In Figure 1, Caris depicts a remote control 102 that sends and receives commands from a set-top box 104 that is connected to the internet 106. *Id.*, 5:25-27. Specifically, Caris discloses “a method of enabling a consumer to program remote control device 102.” *Id.*, 5:38-39.

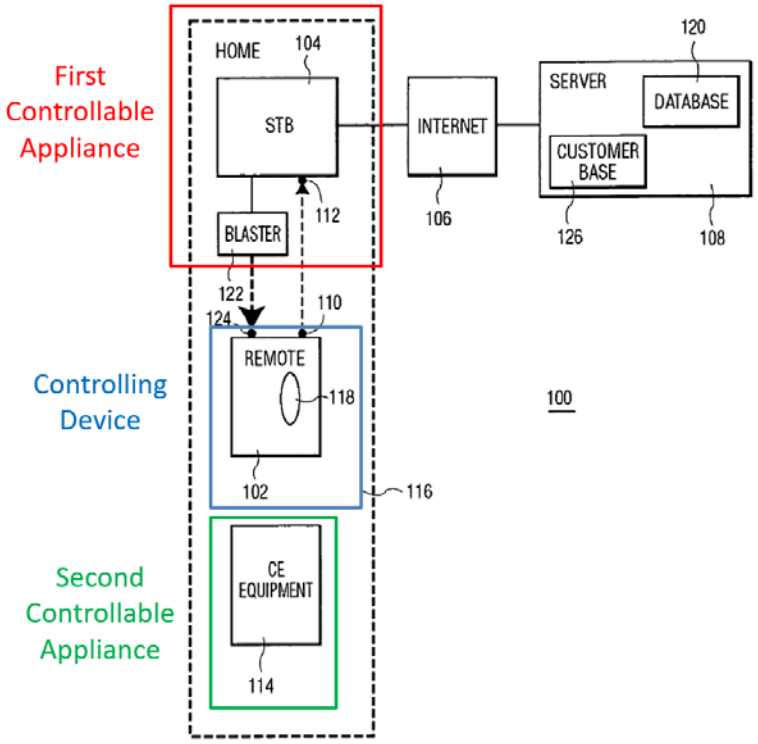


FIG. 1

EX1006, FIG. 1 (annotated).

59. The user initiates the setup process by pressing a dedicated button 118 on the remote control 102 to connect set-top box 104 to a specific server 108 via the Internet 106. EX1006, 5:44-46. "Server 108 [then] presents a web site on a TV display monitor [] connected to STB 104 that guides the consumer to providing certain information." *Id.*, 5:49-51. The user then interacts via STB 104 with server 108 through a user-input means, such as a remote control, to provide information. *Id.*, 5:51-58. Specifically, the user provides "alphanumeric information, e.g., brand, type, serial number, about his/her further equipment, e.g., appliance 114, for which he/she desires remote 102 to be programmed." *Id.*, 5:53-57.

60. After the server 108 receives the information, the server compares the information to entries stored within database 120. *Id.*, 5:58-61. Once a match is found, the server 108 downloads to the set-top box 104 "data representative of a control code and/or UI for being programmed into remote control device 102 via appliance 104." *Id*., 5:61-6:1.

61. Lee similarly describes this same process in an alternative embodiment. Lee explains:

> In a first example of the third embodiment, instructions from the user guide are displayed on a television screen. The consumer is prompted to select the type, brand and model of an electronic consumer device. Unlike in the second embodiment, however, the consumer is not shown a designation of a code set for the selected electronic consumer device, and the consumer is not prompted to enter a three-digit decimal number. Instead, once the consumer has selected the device type, brand and model, ***system 110 sends the code set for the selected electronic consumer device to first remote control device 112 in a programming signal 150***.

EX1016, 19:62-20:6 (emphasis added).

62. As seen from Figure 14 of Lee, the programming signal 150 is sent from set-top box 122 to remote control device 112.

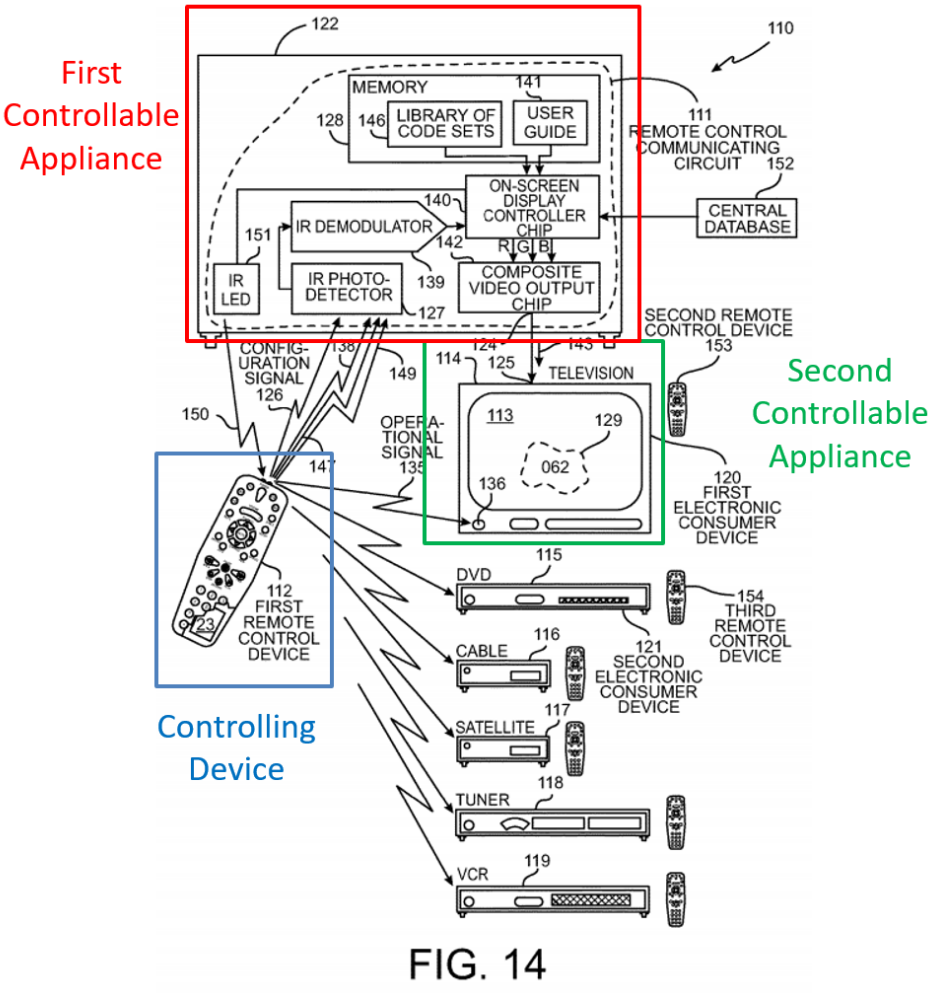


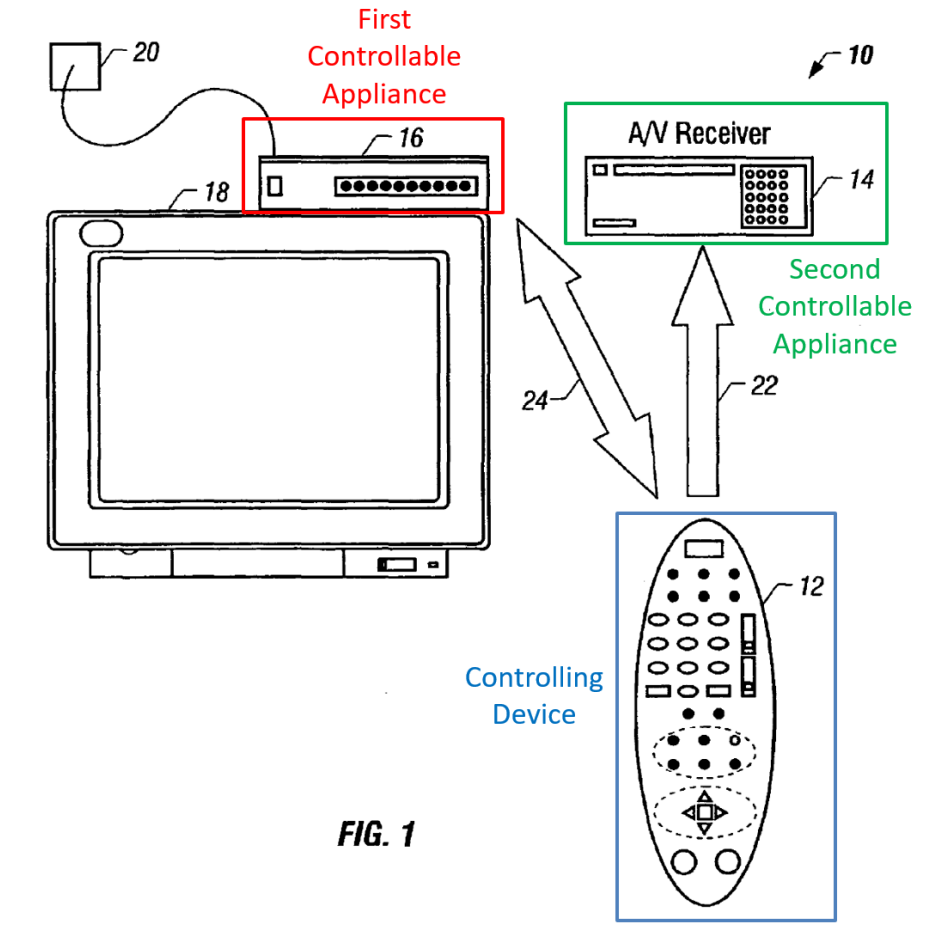
FIG. 14

EX1016, FIG. 14 (annotated).

63. In this manner, Lee demonstrates that transmitting a code set to a remote control device was a well-known and conventional way to program a remote control based on a type or brand selection.

64. Similarly, Martis also describes this same process. Like the ’514 Patent, Martis describes a system that provides the “necessary conversion information” to “enable a remote control device to control a number of different consumer electronic

devices." EX1007, Abstract. Similarly, Martis describes "[a] system 10 for commonly controlling electronic devices." *Id.*, ¶14.



EX1007, FIG. 1 (annotated).

65. Martis explains that system 10 "includes a remote control unit (RCU) 12" that "control[s] an electronic device such as an audio/visual (A/V) receiver 14, a set-top computer system 16 and a television receiver 18." EX1007, ¶14. The RCU 12 is automatically programed using system 16 to operate a "variety of other electronic devices" including, "a TV, a VCR, a DVD player, a CD player or a stereo

system." *Id*., ¶¶14, 22.

66. To program RCU 12, Martis displays prompts instructing a user to select a type, brand, and model of device they wish to control. *Id.*, FIGs. 3A-3C, ¶¶22-25. Based on the selections, Martis checks a database for corresponding "remote control codes." *Id*., ¶¶26-27, 40. Martis further describes downloading these control codes onto the RCU 12 to program the RCU to control the identified device. *Id.*, ¶¶27, 29, 31. For example, Martis states:

> From the database, the required remote control codes can be determined by the system. If each of the selections matches an existing database entry, the appropriate signal information is sent to the RCU 12 by the system 16. In other words, ***the RCU 12 may be provided with protocols to control a given device***. Referring to FIG. 1, the information may be provided along the path 24 from the device 16 to the device 12, thereby ***enabling the device 12 to control the device 14 as indicated at 22. The RCU 12 may also be commanded to store the information in an appropriate format on the RCU 12.***

EX1007, ¶27 (emphasis added).

67. Additionally, Martis also describes another example of this downloading:

> Alternatively, the RCU may contain sufficient memory that ***the master may send the RCU both the protocols and the necessary codes to control the devices. The RCU saves this information in its local memory***. Then, when the user wishes to change the channel on the TV, the user pushes the TV button and this causes the RCU to enter a mode which controls the TV using the pre-sent protocols. Then, when the user pushes the channel up or other control button, the remote control fetches the necessary codes from local memory and ***sends a unidirectional infrared message using the protocol that is also stored locally on the RCU***.

EX1007, ¶31 (emphasis added).

68. In this manner, Martis, along with Caris and Lee, demonstrate that it was well-known and conventional in the art for a device—such as a set-top box—to transmit a codeset to a remote control to program the remote control. It was further conventional to perform this process after a user has selected a type or brand of the device that the user wishes to control.

69. Based on the background of the technology that I have presented here, substitute claims 21-23 recite well-known and conventional processes from the art.

III. THE '962 APPLICATION DOES NOT FULLY SUPPORT SUBSTITUTE CLAIMS 21-23

70. I have reviewed substitute claims 21-23 as provided in the Revised

MTA and as discussed in Dr. Rosenberg's second declaration and believe that the claims are not fully supported by the '962 Application (EX1011). Specifically, the '962 application does not provide written description support for claim element 21[f] as specified in Appendix A of the Revised MTA.

A. The Revised MTA's Version of Claim 21 Differs from the Version Considered by Dr. Rosenberg

71. At the outset, I note that the Revised MTA's version of claim 1, and of claim element 21[f] specifically, differs from the version of claim 1 considered in Dr. Rosenberg's second declaration. *See* EX2005, ¶58. Claim element 21[f] of the Revised MTA recites:

> wherein the displayed instruction data comprises interactive instructions for the user to test at least one controllable function of the second controllable appliance by transmitting a command from the controlling device using a codeset under test and to indicate whether the test was successful in controlling at least one controllable function of the second controllable appliance by transmitting a command from the controlling device to the first controllable appliance ***using a third codeset*** corresponding with the first controllable appliance;

Revised MTA, Appendix A (Claim element 21[f]) (emphasis added).

72. As seen from this recitation, the Revised MTA proposes a third

codeset—which differs from the claimed "first codeset," "second codeset," and "codeset under test"—that is used by the remote control to communicate with the first controllable appliance. Based on my review of Dr. Rosenberg's second declaration, however, he did not appear to opine on such a configuration. Rather, he reviewed the following version of claim element 21[f].

> wherein the displayed instruction data comprises interactive instructions for the user to test at least one controllable function of the second controllable appliance by transmitting a command from the controlling device using a codeset under test and to indicate whether the test was successful in controlling at least one controllable function of the second controllable appliance by transmitting a command from the controlling device to the first controllable appliance ***using a command*** corresponding to the first controllable appliance;

EX2005, ¶58 (emphasis added).

73. As seen from this difference, Dr. Rosenberg has not opined on whether the '962 Application supports a third codeset used to communicate with a first controllable appliance. *See id.*, ¶¶75-83 (discussing claim element 21[f]). When discussing this portion of claim element 21[f], Dr. Rosenberg does not describe the remote control using a "codeset" to communicate with the first controllable appliance. *Id.*, ¶82. Rather, the remote control generally transmits commands that

use the same "format" as the first controllable appliance:

> At a more basic level, in order for the controlling device to inform the first controllable appliance about whether the test was successful or unsuccessful, the testing configuration also must enable the controlling device to communicate with the first controllable appliance by transmitting certain commands ***using a communication format corresponding to the first controllable appliance***, such that the first controllable appliance can recognize those commands to decipher whether a transmission indicates whether the test was successful or unsuccessful.

EX2005, ¶82 (emphasis added).

74. Notably, Dr. Rosenberg does not describe the remote control (*i.e.*, controlling device) using a "third codeset" to communicate with the first controllable appliance. Instead, Dr. Rosenberg understood the functionality to refer to transmitting commands in a format corresponding to the first controllable appliance. As I will further explain below, the specification of the '962 Application also uses this language. The '962 Application does not describe a "third codeset" that is used to communicate with the first controllable appliance.

B. Dr. Rosenberg's Understanding of the Term "Codeset"

75. To further understand the difference between transmitting a command corresponding to the first controllable appliance and a "third codeset," it is useful to

examine Dr. Rosenberg's previous explanation and understanding of a "codeset." For example, as he explained during his first deposition, an "[i]nfrared codeset is a ***set of infrared codes to control various functions of the target device that, you know, the second controllable appliance***. Volume up, volume down, power, et cetera." EX1035, 43:12-16 (emphasis added). As seen from this explanation and in the context of the '962 Application and the '514 patent, the term "codeset" refers to controlling functions of the target device or second controllable appliance.

76. Dr. Rosenberg continued by confirming this understanding:

> Q: Can you provide me a definition for codeset with respect to the '514 patent?
>
> MS. RUBSCHLAGER: Objection. Foundation.
>
> A: It would be a ***set of one or more infrared codes that would be used to control a second controllable appliance***.
>
> Q: Got it. And so a codeset would be one or more key codes. Is that correct?
>
> A: One or more key codes, infrared codes. I spoke about volume up, volume down, power off, power on, power toggle, channel up/down. Those -- each one of those would be a code. Or you called it key code, ***that would go from a remote to a second controllable appliance to control a piece of functionality on that device***. So a codeset would be a collection of one or more of those.

EX1035, 57:12-58:6 (emphasis added).

77. As seen from this explanation, in the context of the ’514 patent and the ’962 application, Dr. Rosenberg understood the term “codeset” to refer to a set of control codes used to control the functionality of the second controllable appliance—not the first controllable appliance. I agree with this understanding. The ’962 application reserves the term “codeset” to referring to the set of codes used to communicate with a second controllable appliance. For example, the specification describes a code set in the following manner:

> Application 406 may respond by displaying the remote control setup code number most likely to result in selection of an ***infrared code set which will operate appliances of the type and manufacture indicated*** (once again, obtained by reference to data 404).

EX1011, 0013:22-0014:2 (emphasis added).

78. This passage demonstrates that the ’962 application uses the term “codeset” to refer to the set of codes used to control the second controllable appliance. As I further explain below, Patent Owner has not identified any specification support that describes the use of a “third codeset” to communicate with the first controllable appliance.

C. The Revised MTA's Version of Claim Element 21[f] Is Not Supported By the '962 Application

79. In providing written description support for claim element 21[f], I understand that Patent Owner has provided citations to the following passages of the '962 application: Abstract; Fig. 6; Fig. 7; 11:1-4; 14:14-18; 14:7-15:23. Revised MTA, 5. Based on my review, however, these passages also do not provide support for the "third codeset" recited in claim element 21[f].

80. For example, the Abstract recites:

> A system and method for enabling set up of a controlling device capable of controlling a plurality of appliances, via an interactive instruction set and associated programming. The programming is accessible by a STB or other controllable appliance and is configured to appropriately display interactive instructions and prompts to a user during a user initiated set up procedure for configuration of another controllable device (e.g., DVD, VCR, DVR, etc) available to the user. Appropriate set up data, generally in the form of ***command library codes, is displayed to the user by the interactive instruction set and associated programming for entry and trial by the user in set up of the desired appliance(s)***.

EX1011, 0027 (Abstract) (emphasis added).

81. As seen from this passage, the Abstract does not describe a "third

codeset." Similarly, FIG. 6 and FIG. 7 also do not depict the "third codeset."

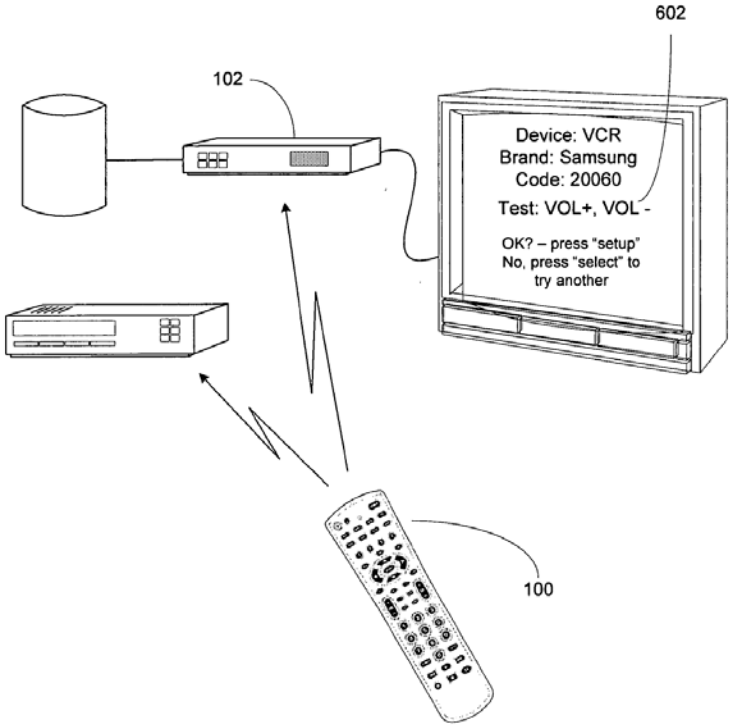


FIGURE 6

EX1011, FIG. 6.

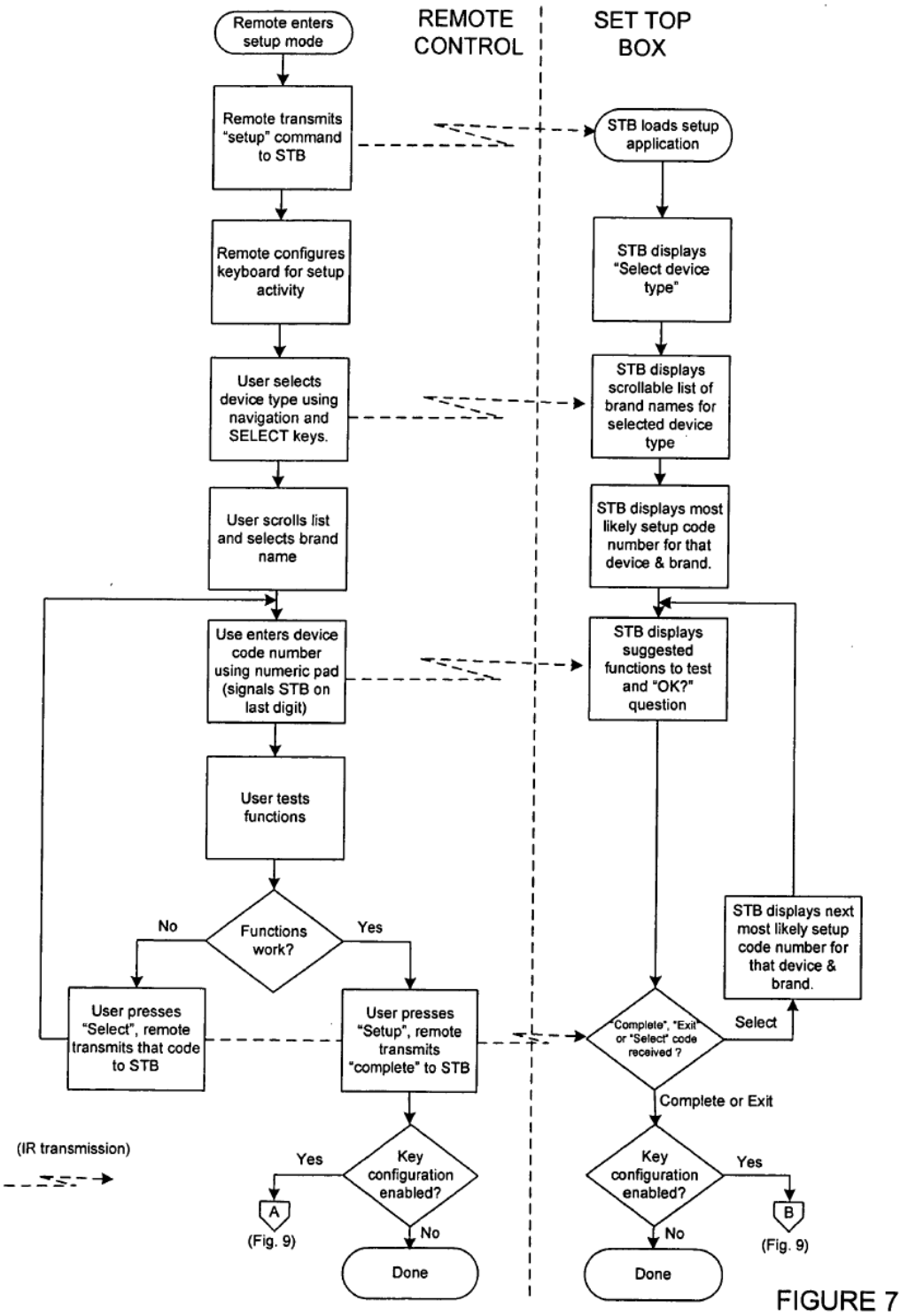


FIGURE 7

EX1011, FIG. 7.

82. As seen in FIG. 6, a television displays "OK? – press 'setup' No, press

'select' to try another." EX1011, FIG. 6. The display of such instructions, however, does not disclose transmitting a command using a "third codeset" corresponding to the first controllable appliance. Similarly, FIG. 7 recites "User presses 'Select', remote transmits that code to STB" and "User presses 'Setup', remote transmits 'complete' to STB." *Id.*, FIG. 7. These statements also do not refer to a "third codeset" used to communicate with the STB.

83. Continuing to the other cited passages, these also do not describe a "third codeset." For example, the first cited passage recites:

> To initially program the universal remote control 100 to access the operational functions of a device, the consumer may use an improved system and method for obtaining, entering, and testing device code information, one exemplary embodiment of which is described hereafter.

EX1011, 0011:1-4.

84. As seen here, this passage does not refer to a third codeset or any communications from a remote control to a first controllable appliance. Similarly, the next large passage cited in the Revised MTA also does not describe a third codeset.

> The user may then enter this number, for example "2" "0" "0" "6" "0" (502 in Figure 5), into remote control 100

> using digit entry keys 204. Upon entry of the final digit of the sequence, remote control 100:
>
> - Configures itself to transmit commands in the indicated infrared command format in response to actuation of function keys 206, 208, 210, etc., and
>
> - Transmits an infrared command in STB format to notify the STB application 406 that device code entry is complete.
>
> Upon receipt of the completion signal from remote control 100, STB application 406 may display a listing of suggested function(s) 602 to test operation of the target appliance using the code just entered, together with ***a user message to, for example, press "setup" if the suggested code works, or to press "select" to try a different code***, all as illustrated in Figure 6.

EX1011, 0014:7-18 (emphasis added).

85. As seen here, this passage describes a user entering a displayed remote control setup number, such as "20060" as depicted in Figure 5 and Figure 6. Upon entering the remote control setup number, the remote control configures itself with the control codes corresponding to the remote control setup number. The user may then test those control codes and then press "setup" if the control codes work or "select" to try another remote control setup number. *Id.*, 0014:14-18. While this

passage generally refers to testing and identifying a remote control setup number that works, this passage does not describe a "third codeset" used to communicate with the first controllable appliance.

86. Similarly, the following passage also does not describe a "third codeset."

> If the user activates the "setup" key, indicative that the current code being tested has been found suitable to command operation of the appliance, ***remote control 100 again transmits a completion signal in STB infrared format***, which is interpreted by application 406 in STB 102 as a successful conclusion of the setup process and causes application 406 to terminate execution, returning STB 100 to normal operation. Likewise, remote control 100 also returns to normal operation, configured now to issue commands in the chosen format that device type (VCR in the example presented) is selected by activation of one of keys 212.

EX1011, 0014:19-0015:4 (emphasis added).

87. While this passage describes the remote control transmitting a "completion signal" to the set-top box (STB) in an infrared format, this general statement does not disclose a remote control device including a third codeset or using a third codeset to transmit a command to the STB. As I previously explained, the

'962 application uses the term "code set" to refer to the particular code set used to command the second controllable appliance.

88. The subsequently passage also does not describe the "third codeset" recited in the claims:

> If on the other hand, the user activates the "select" key, indicative that the current code being tested is unable to command operation of the appliance, remote control 100 ***transmits the "select" command signal in STB infrared format***, which causes application 406 to retrieve and display the next most likely setup code number contained in data 404, so that the user may repeat the test steps using this new code. This setup process may continue until the user finally exits by activating the "setup" or "exit" key, or alternatively, data 404 may include an indicator that no further possibilities exist, upon eventual retrieval of which application 406 may cause a display of instructions to the user to abort the setup process by pressing the "exit" key and, for example, call a customer service number. In an alternate embodiment, application 406 may be configured to ***monitor command data transmitted from remote control 100*** during the setup process for use in automatically progressing through the various setup instructions and prompts associated with the setup application. By way of example only, application 406 may be configured to monitor command data transmitted from

> remote control 100 in order to echo key presses on the TV screen as a means of visual verification to the user that a setup code was entered correctly, or to present prompts such as "Did your DVD player respond to the Power On command? Press "1" for yes, or press "0" for no" ***whereupon receipt of either the "1" or "0" key command data will cause application 406 to proceed automatically to another instruction or prompt in the setup procedure***.

EX1011, 0015:5-23 (emphasis added).

89. Similar to the previous passage, this passage also refers to transmitting a "command signal in STB infrared format" but does not describe a remote control device maintaining a third codeset to communicate with the STB or using such a codeset to perform the communications. As previously explained and acknowledged by Dr. Rosenberg, the '962 application uses the term "code set" to refer to identifying the appropriate code set to control the second controllable appliance.

90. Thus, nothing in the cited passages describe "transmitting a command from the controlling device to the first controllable appliance using a third codeset corresponding with the first controllable appliance." The '962 application therefore does not provide written description support for claim element 21[f].

IV. A POSA WOULD NOT HAVE BEEN ABLE TO DISCERN THE SCOPE OR BOUNDARIES OF CLAIM 23.

91. A POSA would not have been able to discern the scope or boundaries

of claim 23 with reasonable certainty. First, the recitation of a "third codeset" in claim 23 conflicts with the "third codeset" in claim 21. Second, the recitation of a "third codeset" being accessed when a "second codeset" is unsuccessful as recited in claim 23 conflicts with the requirement for the second codeset to be successful in claim 21. Thus, even when viewed in the light of the specification and the prosecution history, a POSA would not have been able to discern the scope of claim 23 with reasonable certainty due to these conflicts.

A. The "Third Codeset" Recited in Claim 23 Conflicts with the "Third Codeset" Recited in Claim 21

92. As I previously explained, claim element 21[f] recites a "third codeset" corresponding to the "first controllable appliance."

> wherein the displayed instruction data comprises interactive instructions for the user to test at least one controllable function of the second controllable appliance by transmitting a command from the controlling device using a codeset under test and to indicate whether the test was successful in controlling at least one controllable function of the second controllable appliance by transmitting a command from the controlling device to the first controllable appliance ***using a third codeset corresponding with the first controllable appliance***;

Revised MTA, Appendix A (Claim element 21[f]) (emphasis added).

93. Claim 23 also recites a "third codeset" but states that the "third codeset"

corresponds to the "type or brand of the second controllable appliance":

> The method as recited in claim 21 wherein the data associated with the second controllable appliance further comprises ***a third codeset associated with the type or brand of the second controllable appliance*** when the user indicates that the second codeset was unsuccessful in controlling at least one controllable function of the second controllable appliance.

Revised MTA, Appendix A (Claim 23) (emphasis added).

94. In comparing claim 23 with claim 21, there is a conflict with the use of the term "third codeset" in both claims. Specifically, claim 21 states that the third codeset corresponds to the first controllable appliance and is used to transmit an indication of whether a test was successful. While I previously explained that the '962 application does not provide written description support for this claim term, claim 21 still refers to the third codeset corresponding to the first controllable appliance.

95. In contrast, claim 23—which depends from claim 21—states that the third codeset is associated with the type or brand of the second controllable appliance.

96. This creates a conflict with the language from claim 21 because the "third codeset" as defined in claim 21 is used to transmit "a command from the

controlling device to the first controllable appliance." Claim 21 recites the third codeset as being used to issue commands to the first controllable appliance while claim 23 states that the third codeset is used to issue commands to the second controllable appliance. Due to the differences in devices (*i.e.*, first controllable appliance vs. second controllable appliance), claim 23 conflicts with claim 21.

97. An additional conflict also arises due to the sequence of events for the "third codeset." In claim 21, the third codeset indicates whether the codeset under test was successful in controlling the second controllable appliance. This implies that the remote control device has already been configured to use the third codeset to perform communications with the first controllable appliance. In claim 23, however, the claimed "third codeset" is only used when the "second codeset was unsuccessful" in controlling a function of the second controllable appliance. Claim 23 refers to a "third codeset" as an alternative to the second codeset, which was unsuccessful. In this manner, the functionality of the "third codeset" as recited in claim 23—which is used to control the second controllable appliance—conflicts with the functionality of the "third codeset" as recited in claim 21 and its communications with the first controllable appliance.

98. Thus, a POSA would not have been able to discern the scope or boundaries of claim 23 with reasonable certainty due to this conflict.

B. The "Third Codeset" Being Accessed When a Second Codeset is "Unsuccessful" as Recited in Claim 23 Conflicts with the "Second Codeset" Being "Successful" as Recited in Claim 21

99. A second conflict that arises when comparing claim 23 with claim 21 is the use of the "third codeset" depending on whether the "second codeset" successfully controls the second controllable appliance. As a requirement in claim 21 and specifically claim elements 21[i] and 21[j], the second codeset must control the second controllable appliance as indicated by a successful second test:

> receiving, from the controlling device, an indication that a ***second test was successful*** in controlling at least one controllable function of the second controllable appliance ***using the second codeset***; and
>
> configuring the second codeset associated with the second test to the controlling device in response to the user indicating the ***second test was successful***.

Revised MTA, Appendix A (Claim elements 21[i] and 21[j]) (emphasis added).

100. In this manner, claim 21 requires a successful test and implementation of the second codeset at the remote control device. In contrast, however, claim 23 recites the second codeset being unsuccessful.

> The method as recited in claim 21 wherein the data associated with the second controllable appliance further comprises ***a third codeset*** associated with the type or

> brand of the second controllable appliance ***when the user indicates that the second codeset was unsuccessful*** in controlling at least one controllable function of the second controllable appliance.

Revised MTA, Appendix A (Claim 23) (emphasis added).

101. As seen from the language in claim 23, the application of a third codeset when the "second codeset was unsuccessful" conflicts with the language of claim 21 and its requirement that the second codeset successfully control the second controllable appliance.

102. Claim 21 does not recite a conditional statement related to testing the second codeset. Rather, claim 21 recites receiving an indication that the second test was successful. I understand that Dr. Rosenberg confirmed during his deposition that the first controllable appliance receives this indication. EX1043, 63:16-64:9. Additionally, as recited in claim element 21[j], the remote control configures itself to use the second codeset after determining that the second test was successful. *See also id.*, 64:22-65:12, 75:4-11. (Dr. Rosenberg confirming that the remote control performs the "configuring" step). Based on claim elements 21[i] and 21[j], claim 21 requires that the second codeset successfully controls the second controllable appliance.

103. Claim 23, however, is premised on the second codeset being

unsuccessful. This conflicts with the language in claim 21. Additionally, this creates ambiguity as to the scope of claim 23 and when the claim 23 would actually occur. Because the second codeset is successful in claim 21, it is unclear whether claim 23 would be operable. Due to this conflict and lack of clarity, a POSA would not have been able to discern the scope or boundaries of claim 23 with reasonable certainty.

V. SUBSTITUTE CLAIMS 21-23 ARE UNPATENTABLE AS OBVIOUS UNDER 35 U.S.C. § 103 IN VIEW OF LEE, O'DONNELL, AND HAYES

104. Substitute claims 21-23 are unpatentable over Lee (EX1016), O'Donnell (EX1009), and Hayes (EX1041). As I explained in my first and second declarations, both Lee and O'Donnell describe configuring a remote control by presenting interactive instructions to guide a user. EX1003, ¶¶194-98, 216-23; EX1034, ¶¶93-135. Similarly, Hayes also describes presenting interactive instructions to guide a user to configure a remote control device as I further explain below. As such, Lee, O'Donnell, and Hayes are in the same technological field as the '514 patent and the '962 Application. Thus, the combination of Lee, O'Donnell, and Hayes renders claims 21-23 obvious.

A. Overview of Lee

105. Like the '514 Patent, Lee discloses a system that "uses selection criteria for identifying an electronic consumer device to identify a codeset likely to be appropriate for communicating with the electronic consumer device." EX1016, Abstract. Specifically, Lee discloses a "system 110 for remotely controlling

electronic consumer devices." *Id*., 15:31-34. The "[s]ystem 110 employs the television to assist consumers to program a single remote control device to operate the television, as well as the other electronic consumer devices in their households." *Id*., 15:37-40. The system 110 aids the consumer in "programming first remote control device 112" using an "interactive, step-by-step user guide." *Id*., 17:28-30.

106. When a user presses a "setup" key on the remote control 112, a signal is sent to set-top box 122 to initiate a programming process. *Id.*, 16:14-22. Set-top box 122 displays programming instructions as video text on display 113 of television 114. *Id.*, 16:22–25.

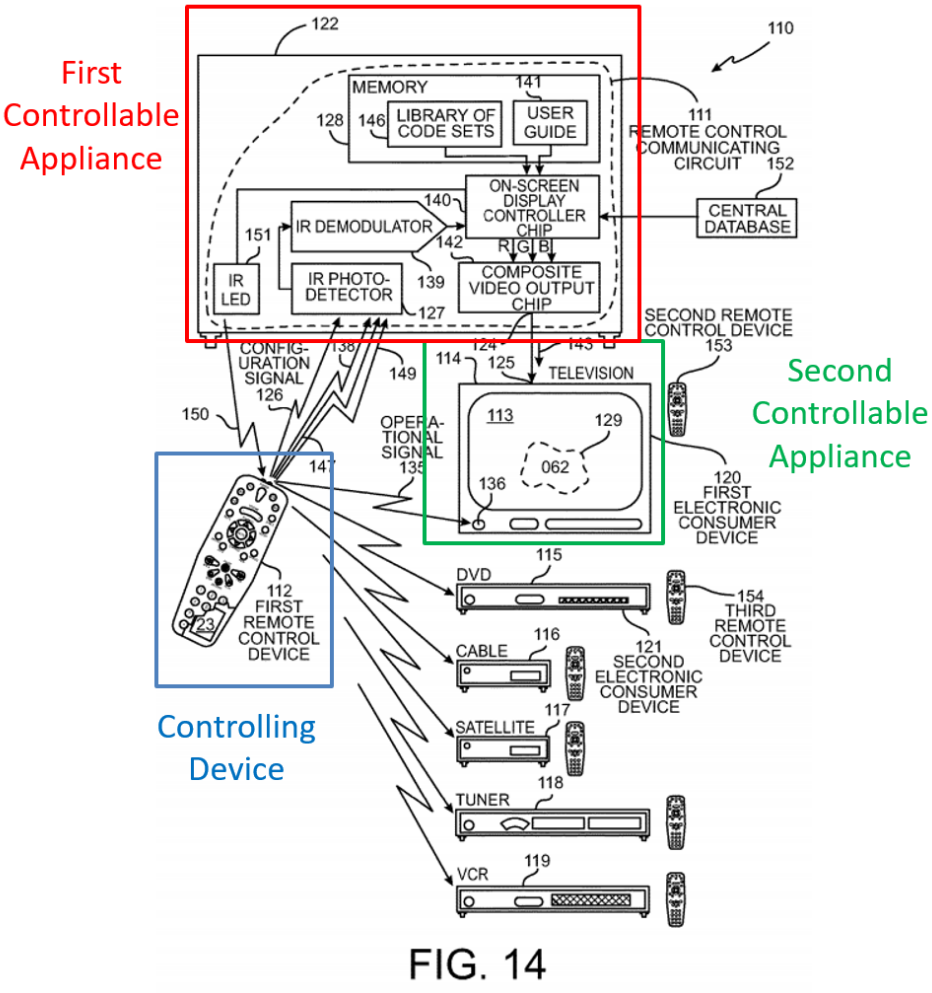


FIG. 14

EX1016, FIG. 14 (annotated).

107. The consumer views the instructions in the form of a user manual displayed on the television screen, which enables consumers to program their electronic consumer devices in a step-by-step interactive manner. EX1016, 15:40-43, 16:29-31. This step-by-step user guide is implemented using a remote control communicating circuit 111. The remote control communicating circuit 111 causes the display of a sequence of instructional menus prompting a consumer to select a

type, brand, and model of device that the user wishes to control with a remote control device. *Id*., 17:30-60, 18:5-35.

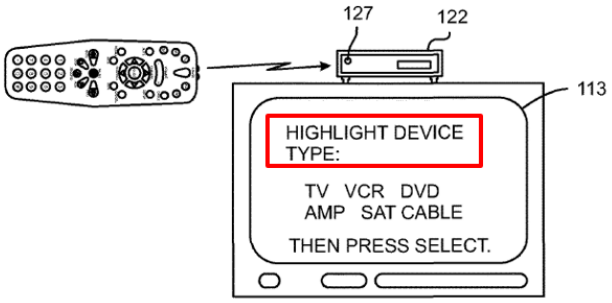


FIG. 16

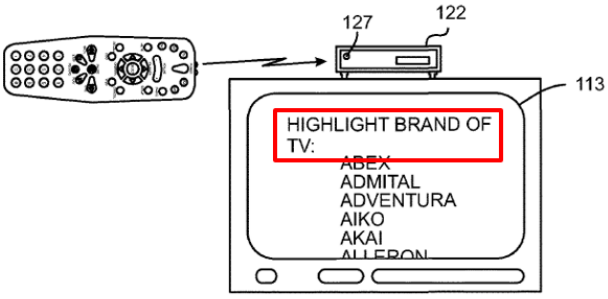


FIG. 17

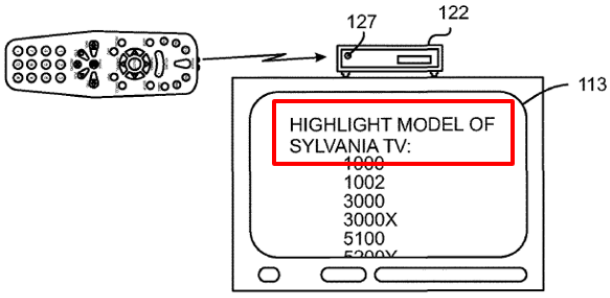


FIG. 18

EX1016, FIGs. 16-18 (annotated).

108. "After the consumer selects a certain model of [the selected device], remote control communicating circuit 111 displays a designation of a first code set on [the] display 113." EX1016, 18:35-39. The designation of the first code set can be a "three-digit decimal number" that the user is then prompted to enter using the

remote control device. *Id*., 18:39-46. After the user inputs the designation, the remote control device is configured to operate the selected electronic consumer device. *Id*., 18:44-57.

109. While my previous declaration focused on Lee's display of a code for the user to enter on the remote control device, Lee also describes an embodiment where a codeset is transmitted to the remote control from set-top box 122. *See id.*, 19:62-20:6, FIG. 14. Specifically, Lee states:

> In a first example of the third embodiment, instructions from the user guide are displayed on a television screen. The consumer is prompted to select the type, brand and model of an electronic consumer device. Unlike in the second embodiment, however, the consumer is not shown a designation of a code set for the selected electronic consumer device, and the consumer is not prompted to enter a three-digit decimal number. Instead, once the consumer has selected the device type, brand and model, ***system 110 sends the code set for the selected electronic consumer device to first remote control device 112 in a programming signal 150***.

EX1016, 19:62-20:6 (emphasis added).

110. As seen from Figure 14, which I have reproduced above, the "programming signal 150" described here is transmitted from set-top box 122 to

remote control 112.

B. Overview of O'Donnell

111. Similar to '514 Patent, O'Donnell also describes a system that allows "a user to program a universal remote control transmitter device by presenting interactive display menus." EX1009, Abstract. Additionally, O'Donnell explains that these interactive menus allow a user to specify appliances based on "desired types, brands, and models." *Id*.

112. O'Donnell describes initiating a programming process by "[p]ressing the appropriate button" on the universal remote control. *Id*., 1:59-61. In response to the button press, a TV displays a prompt instructing the user to select a device to control. *Id.*, 1:59-66. As explained by O'Donnell:

> Pressing the appropriate button on the URC leads to a menu, which says, for example, "Press and hold the device key for the device you want to control." For URC's which are designed with a single toggle key or a mechanical switch to choose the appliance type, appropriate instructions would be displayed on the TV as to how to cause the URC to enter the program mode for a desired type of appliance, e.g., for VCR's.

EX1009, 1:59-66.

113. Upon selecting a device such as a VCR, the TV displays another menu that "prompt[s] the user to select the brand of the VCR by navigating through a list

of possible VCR brands." *Id.*, 2:2-7. O'Donnell discloses that:

> After the user selects an appliance the URC enters the "program" mode and also transmits a signal, e.g., IR code, to the television to close the loop and activate the next menu. The TV displays an acknowledgement 11 that the URC programming routine has been entered successfully and the TV enters its URC routine 12 for the selected device, for example, VCRs (see routine 13). The next menu (routine 14) may prompt the user to select the brand of the VCR by navigating through a list of possible VCR brands.

EX1009, 1:66-2:8.

114. A user may select a particular brand, and O'Donnell's "menu-guided method" may continue to an "acknowledgment screen" that provides further instructions. *Id.*, 2:44-52. O'Donnell describes an example of the content of this acknowledgement screen:

> You have selected a RCA brand VCR
> You will need to try a few formats of code. **17**
> (Or the television display may retrieve **16** available formats for the selected type and brand of appliance.)
> Please press the key indicated and check if the device responds (eg. 'play' for a VCR, or channel up for a cable box).
> To indicate the correct code, press and hold that key for 3 seconds

EX1009, 2:54-62.

115. As seen in this screen, O'Donnell provides additional testing instructions, such as pressing the "play" or "channel up" key to determine if the device has responded. EX1009, 2:54-62. This checking confirms whether the remote control has been properly programmed.

116. O'Donnell provides another instruction example stating:

> "To verify that the URC will operate your TV, ***press VOLUME UP or DOWN*** (the most popular code for the brand selected would be programmed). If the TV responded, ***press OK on the URC***."
>
> "If the TV did not respond, press CH UP to advance to the next code."

EX1009, 3:25-28, 3:31-32 (emphasis added).

117. In response to successful programming, the URC sends a signal to "clear the on-screen display (OSD)" and indicate completion of the programming. *Id.*, 3:29-30. "Once an unambiguous code is found, an 'acknowledge' code is sent to the television by the URC." *Id.*, 2:64-65. Based on these prompts and instructions, O'Donnell describes providing "visual feed-back from the display . . . to make the [universal remote control] programming process easier." *Id.*, 1:37-40.

C. Overview of Hayes

118. Similar to '514 Patent, Hayes also describes a system and method for "automatically setting up a universal remote control." EX1041, Title. Hayes

specifically relates to "setting up a universal remote control to control the operation of one or more devices." *Id.*, ¶2. Hayes describes a "remote control 10" or "remote control 10" with a "key matrix" having "physical buttons, a touch screen display, or a combination thereof." *Id.*, ¶26. When configured with the correct code set and when a user presses a button or key, the remote control is configured to "retrieve a command code corresponding to the activated command key from memory 26 and transmit the command code to a device in a format recognizable by the device." *Id.*, ¶27.

119. One example of such a remote is portable display device 220 as depicted in Figures 20 and 21.[1] *Id.*, ¶97.

[1] For these figures, as well as the other figures from Hayes (EX1041) reproduced below, I have reproduced the figures from the patent version of Hayes (EX1042) because they provide clearer images. I have confirmed that the content is the same between the figures.

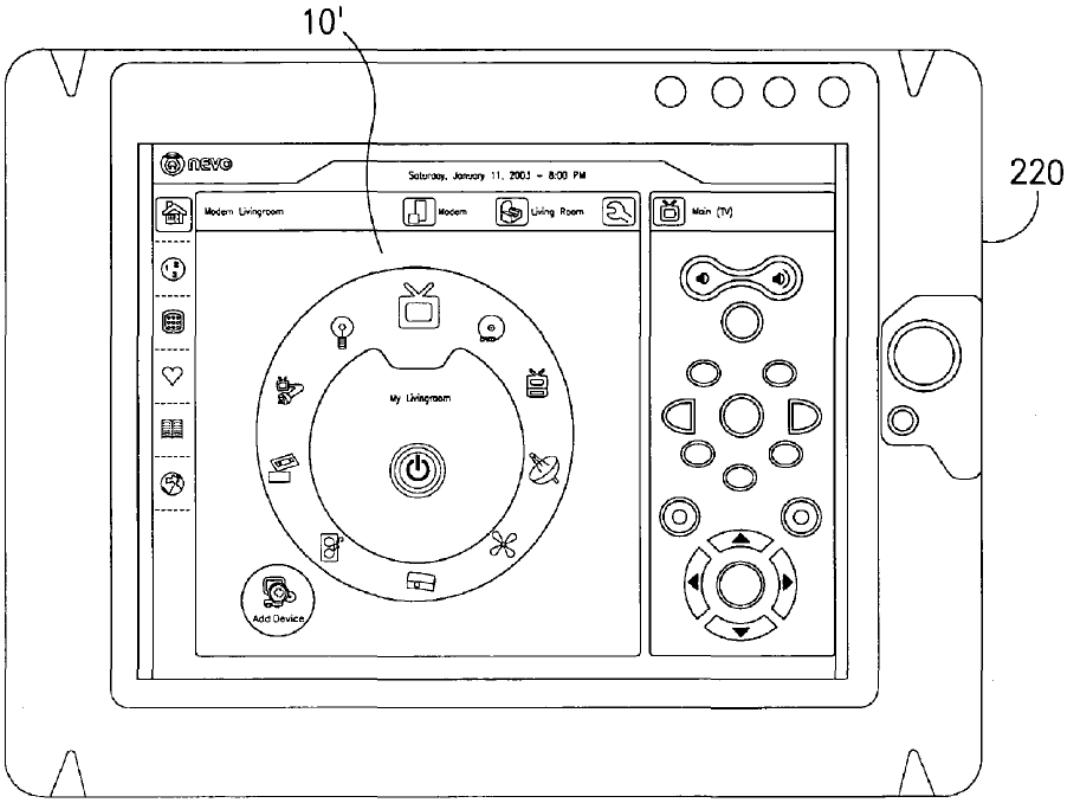


FIG. 20

EX1041, FIG. 20; EX1042, FIG. 20.

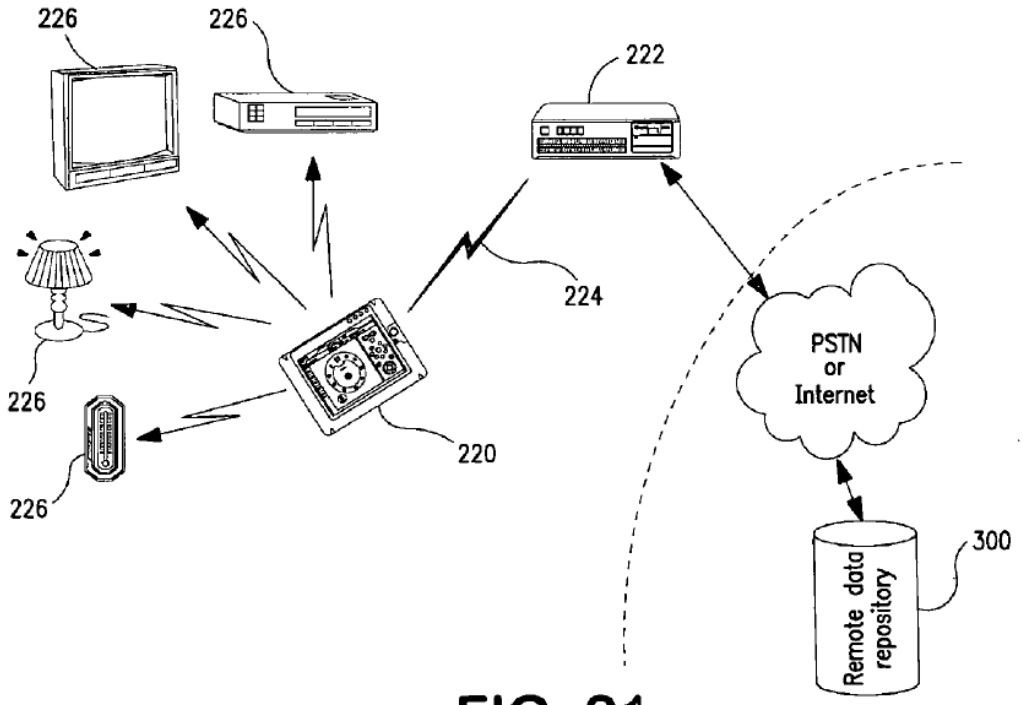


FIG. 21

EX1041, FIG. 21; EX1042, FIG. 21.

120. The "portable display device 220" is remote control that is "adapted to be an extension of a personal computer 222." EX1041, ¶97. Additionally:

> ***[R]emote control 10' may be provided as an application that resides partly or totally on the portable display device 220*** and/or the personal computer 222 whereby the portable display device 220 can be used to interact with the remote control 10′ to allow the user to conveniently control consumer entertainment or home automation devices 226.

EX1041, ¶97 (emphasis added).

121. "To set up the remote control 10′ to match the device(s) to be controlled,

a graphical user interface setup wizard 200 may be provided." *Id.*, ¶98. Hayes depicts the functionality of this setup wizard in Figures 23-28. *Id.* Personal computer 222 may generate the graphical user interfaces depicted in Figures 23-28, which may be displayed on portable display device 220. *Id.*, ¶¶83, 97-98, 103.

122. While Figures 23-28 depict a setup wizard 200 as displayed on portable display device 220, Hayes explains that this functionality may be implemented on other devices. *Id.*, ¶105. For example, with respect to setting up the remote control:

> [T]he functionality of the universal remote control can be included ***in other devices such as PDAs, personal computers, home devices, or the like***. Accordingly, it will be understood that the particular arrangements and procedures disclosed are meant to be illustrative only and not limiting as to the scope of the invention which is to be given the full breadth of the appended claims and any equivalents thereof.

EX1041, ¶105 (emphasis added).

123. Turning to Figure 23, setup wizard 200 may include an "icon 201" allowing a user to add a device for the remote control to operate. *Id.*, ¶98.

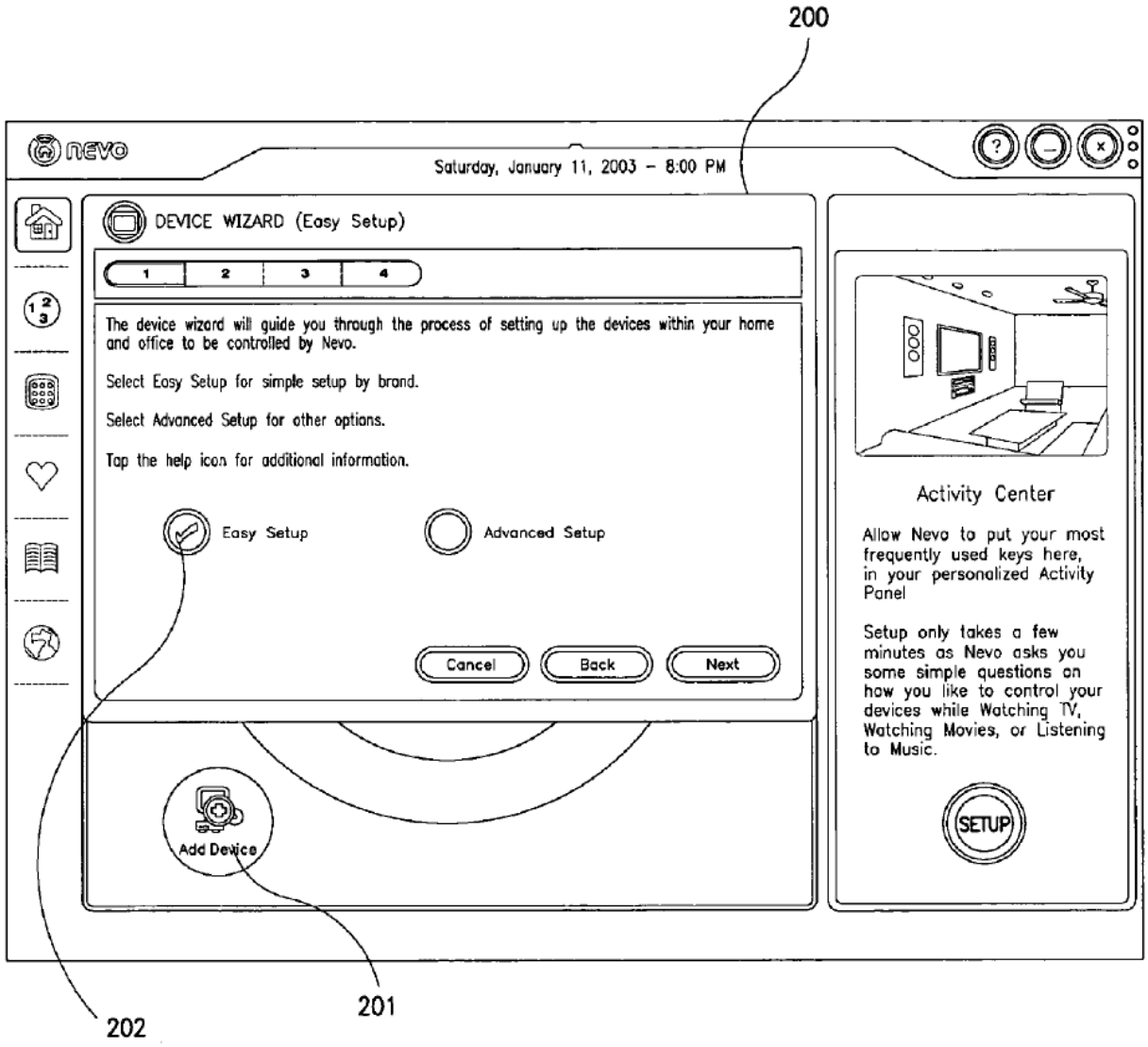


FIG. 23

EX1041, FIG. 23; EX1042, FIG. 23.

124. After selecting this icon, the setup wizard 200 allows the user to specify a device to be controlled as well as a particular brand. EX1041, ¶99. This is depicted in Figure 24 with the accompanying description:

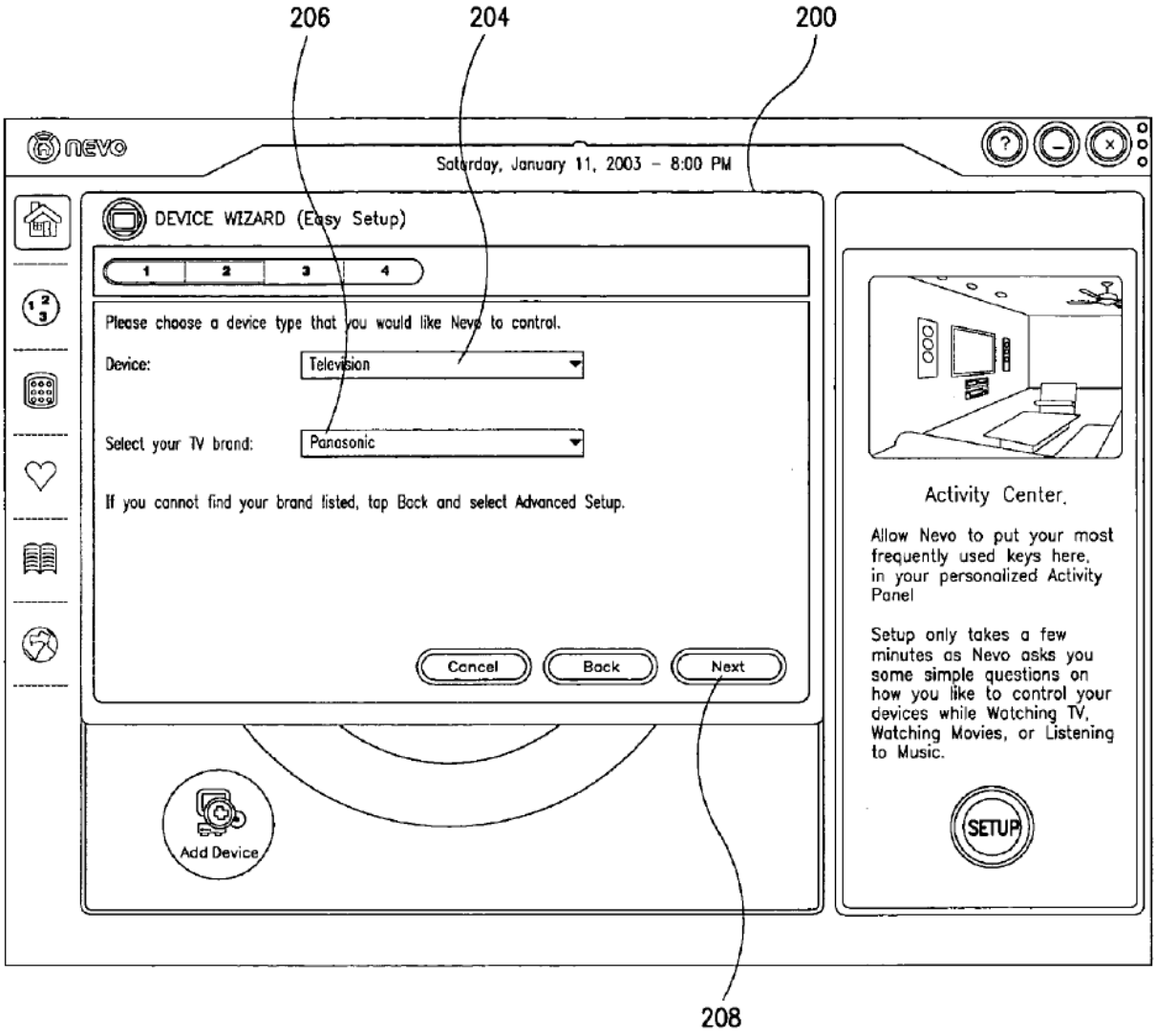


FIG. 24

EX1041, FIG. 24; EX1042, FIG. 24.

For example, the setup wizard 200 may present to the user a drop down menu list 204 or like GUI interface element by which the user may identify the ***device type, e.g., television, VCR, DVD, etc***., as illustrated in FIG. 24. Once the device type is indicated, the setup wizard 200 may use that information to present to the user a ***listing of known***

> ***brands for the selected device type*** from which the user may select the brand of the intended target device, for example, using the drop down menu list 206 or like GUI element.

EX1041, ¶99 (emphasis added).

125. After selecting a particular device and type of device to control, "the setup wizard 200 first loads or provides access to one or more sets of function codes for the specified device and brand (in the case where multiple sets exist) that are within local memory." *Id.*, ¶101. The loading sets up the remote control device for testing of multiple "device codes" as depicted in Figure 25.

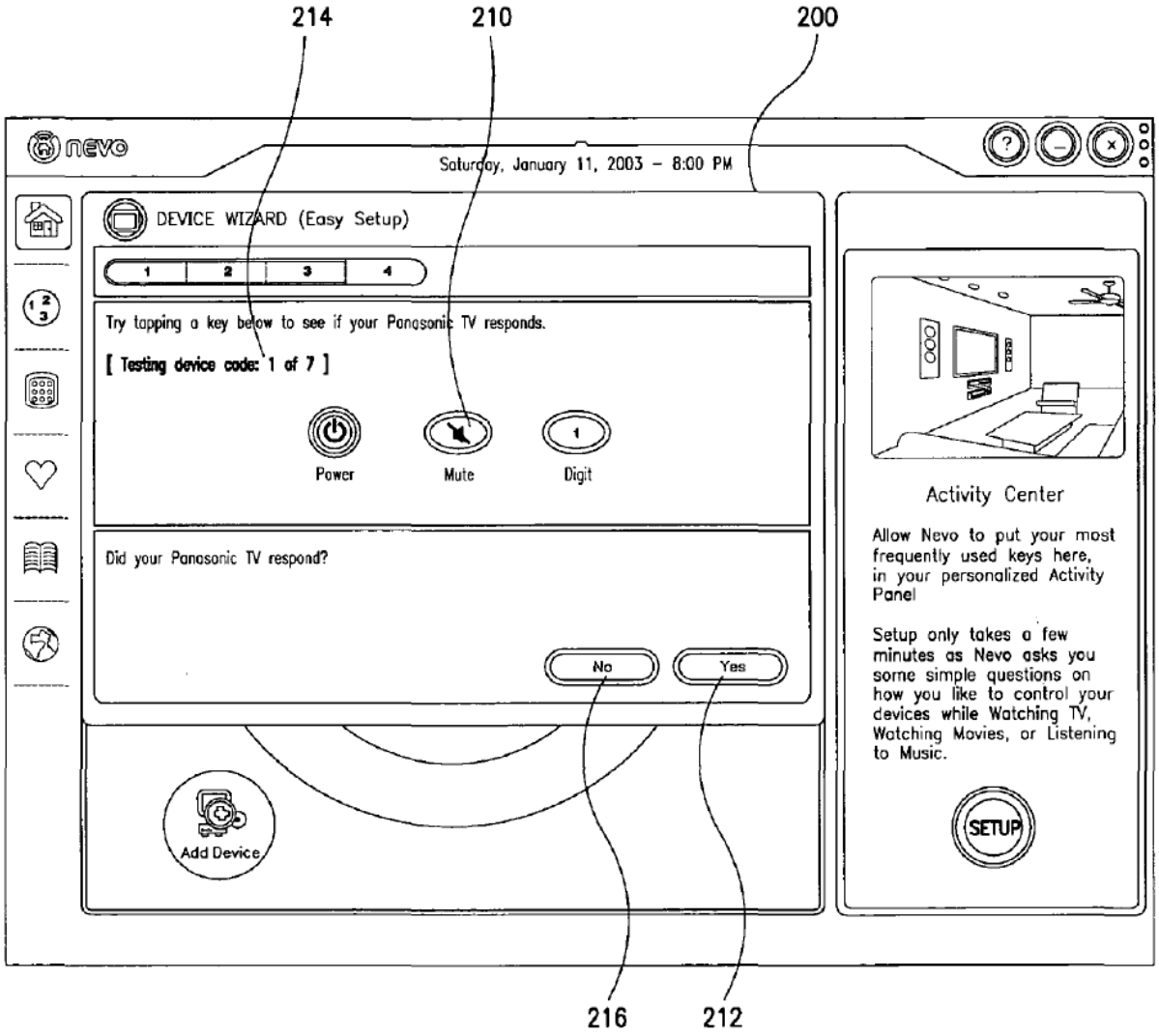


FIG. 25

EX1041, FIG. 25; EX1042, FIG. 25.

126. As seen in Figure 25, an "indication of which function code set is being used in the testing procedure may be indicated, for example, via text 214." EX1041, ¶101. The setup wizard 200 instructs the user to press a button to transmit a function code from the remote control to the intended target device. *Id.* As seen in Figure 25, examples may include a power or mute command.

> If the user transmits a command and the intended target device does respond as expected, ***the user may indicate the successful interaction between the remote control 10′ and the target device, for example, by activating the "yes" icon 212***. An indication of a successful interaction between the setup wizard/remote control 10′ and the intended target device may then be used to lock the function codes for the function code set presently being utilized in the testing procedure to a device mode in the remote control 10′ which function codes are to be used to command the operation of the intended target device when the remote control 10′ is placed into that device mode.

EX1041, ¶101 (emphasis added).

127. If the target device does not respond, the user is instructed to activate "'no' icon 216." *Id.*, ¶102. The system then cycles through additional "available function code sets for the specified device and brand." *Id.* The user then continues testing until a response is detected. *Id.*, ¶¶102-03. An example of cycling through different remote control setup codes as well as testing functions of different code sets is depicted in Figure 28.

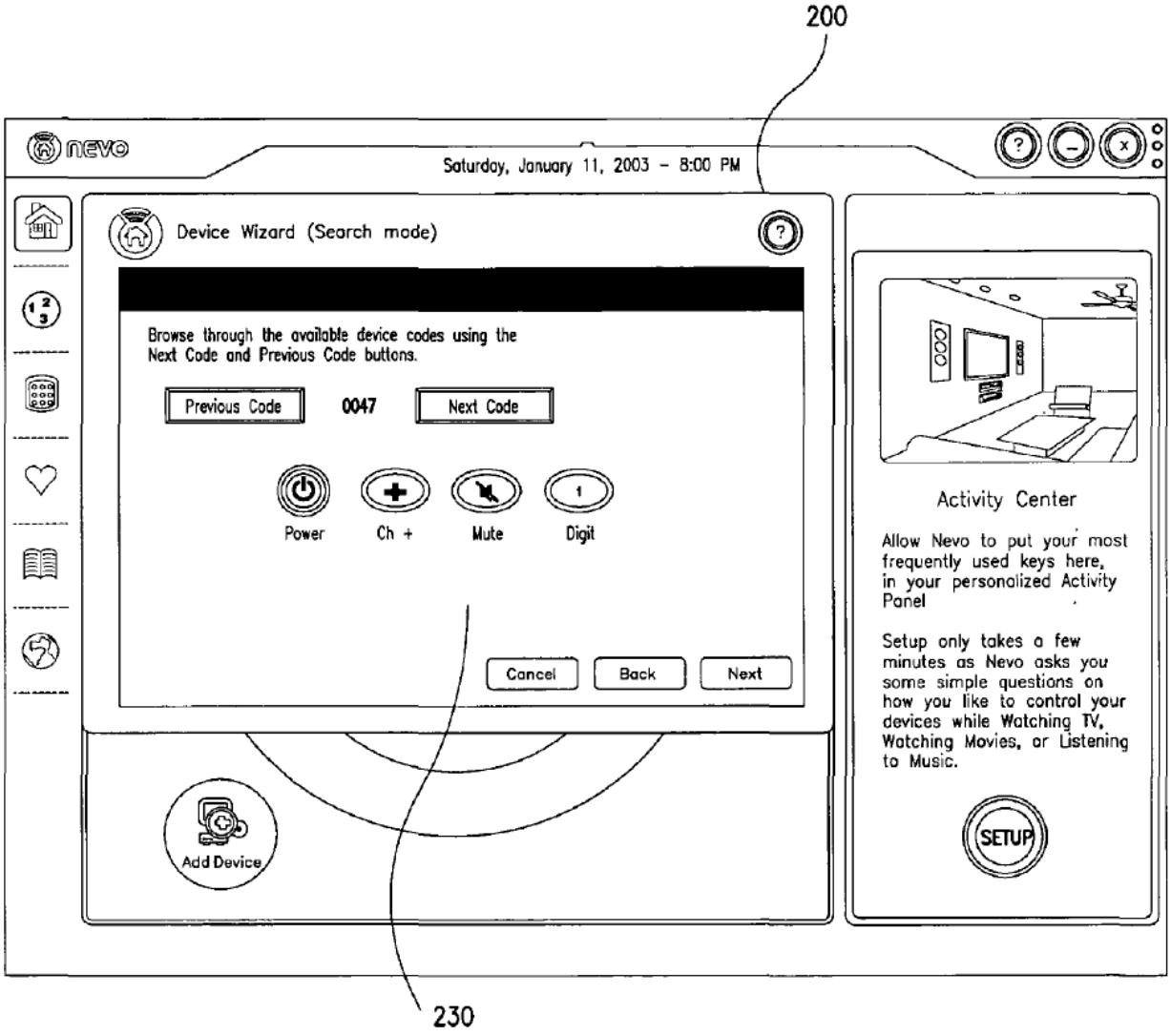


FIG. 28

EX1041, FIG. 28; EX1042, FIG. 28.

128. Hayes refers to the process depicted in Figure 28 as a "step-and-set" process. EX1041, ¶103. As seen in Figure 28, the user may press the "Previous Code" or "Next Code" buttons to "Browse through the available device codes." *Id.*, FIG. 28. This graphical user interface also displays the particular device code being

tested and also depicts functions that may be used to test the code, such as "Power," "Ch +," "Mute," and "Digit." *Id.*

129. As previously explained, while the functionality of these display screens is described with reference to a portable display on a remote control, Hayes explains that "the functionality of the universal remote control can be included in other devices such as PDAs, personal computers, home devices, or the like." *Id.*, ¶105. Similarly, "it should be appreciated that any of the above described methods can be used alone or in combination to setup the remote control." *Id.*

D. A POSA would have been motivated to combine Lee, O'Donnell, and Hayes

130. A POSA would have been motivated to combine O'Donnell with Lee to provide a process for verifying that a remote control was properly configured to control a desired appliance. A POSA would have been motivated to combine Hayes with Lee and O'Donnell to further streamline this testing process with intuitive graphical user interfaces for instructing users to test multiple code sets. As I previously explained and as acknowledged by Dr. Rosenberg, testing was a well-known and common process that would be particularly desirable to confirm proper remote control operation and to enhance reliability. *See* Section II.F.

> A: I don't think anyone wants low reliability in their consumer electronic equipment.

EX1035, 102:13-16.

> A: I think that most purchasers and users of consumer electronics, I think it's very reasonable to say that, yes, they would seek out and -- they would seek out reliable systems, and it would cause frustration if they had an unreliable system.

EX1035, 103:5-10.

> But I think that's a very understandable opinion by most all of us, that we would seek out and desire and purchase and utilize systems that have a high degree of reliability.

EX1035, 103:14-17.

131. A POSA would have been motivated to provide this reliability and proper programming confirmation by implementing O'Donnell's testing instructions with Lee to enhance Lee's remote control configuration process. Implementing O'Donnell would provide "visual feed-back from the display . . . to make the [universal remote control] programming process easier." EX1009, 1:37-40.

132. Additionally, a POSA would have been motivated to also implement Hayes's organization of testing instructions into different graphical user interfaces to provide a user-friendly guide to aid a user with the remote control setup process. For example, by generating different graphical user interface displays with discrete steps for the remote control setup process, the process may avoid overwhelming users with too much information at once. This may aid in simplifying the remote

control setup process, which Hayes describes as typically "being demanding, exacting and generally frustrating for many users." EX1041, ¶3. Hayes breaks down the programming steps of identifying a type of device or brand, loading a code set for testing, testing a command for that codeset, indicating whether a response from the target device was detected, and testing additional codesets into discrete elements to alleviate user frustration. *Id.* A POSA would have been motivated to implement such benefits with Lee and O'Donnell to further streamline the remote control setup and testing process already outlined in the Lee-O'Donnell combination. Implementing Hayes would have provided user-friendly graphical user interfaces that would aid users in testing multiple code sets for a particular type of device or brand.

133. In the combination, a POSA would have implemented the testing and verification instructions described in O'Donnell and Hayes with Lee. For example, the combination would prompt a user to select a device and/or brand as described in Lee. EX1016, 18:5-11. O'Donnell and Hayes also describe this functionality. EX1009, Abstract, 1:59-66; EX1041, ¶99, FIG. 24. Upon selecting the device and/or brand, a "designation of a first code set" may be displayed as described in Lee. EX1016, 18:35-46. "[T]he designation of the first code set might be the three-digit decimal number '062', as shown in FIG. 14." *Id.*, 18:39-43. The user may enter this first code set designation. The combined system would then instruct a user to press

a function key such as power on/off or volume up/down as described in O'Donnell and Hayes and confirm whether the desired appliance correctly reacted. EX1009, 3:25-28; EX1041, ¶101, FIG. 25. Additionally, the combination would instruct the user to press a button such as an OK button as described in O'Donnell or a "yes" button as described in Hayes to indicate that testing was successful. EX1009, 3:25-28; EX1041, ¶101, FIG. 25. This would signal success and inform Lee's set-top box to exit or conclude the set-up process. EX1009, 2:64-3:3, FIG. 1 (Boxes 18 and 19).

134. When the test is unsuccessful, a user may press a button as described in Hayes. EX1041, ¶102. The combined system would then cycle through additional code sets for the specified device and brand. *Id.* The combined system would also continue to cycle through and iteratively display remote control setup numbers for the user to enter into the remote control as described in Lee and Hayes. EX1016, 18:35-46; EX1041, ¶103, FIG. 28. The user would also continue testing in the manner previously described.

135. In this manner, the combined Lee-O'Donnell-Hayes configuration process would therefore instruct a user to program a remote control based on a selected type or brand of device, confirm that the programming was successful via O'Donnell's and Hayes's functionality testing process, and also cycle through and display remote control setup numbers to test multiple code sets. Accordingly, a POSA would have been motivated to combine Lee, O'Donnell, and Hayes.

136. A POSA would have also known how to combine Lee, O'Donnell, and Hayes as I described above and would have had a reasonable expectation of success. Lee, O'Donnell, and Hayes are all directed to conventional consumer electronic appliances such as set top boxes, televisions, VCRs, and personal computers and using such devices to program a remote control. EX1016, Abstract, 17:28-30; EX1009, Abstract, 1:59-66; EX1041, Title, ¶¶2, 97, 105.

137. Combining Lee, O'Donnell, and Hayes would have been predictable and would simply amount to updating Lee's software to include the testing instructions and retrieval of additional remote control setup numbers as described in O'Donnell and Hayes. EX1009, 2:54-62, 3:25-32; EX1041, ¶¶101-03, FIGs. 25, 28. For example, as described in Hayes, its graphical user interfaces may be implemented on devices such as "personal computers, home devices, or the like." EX1041, ¶105.

138. This combination would operate to perform its intended purposes. Combining Lee, O'Donnell, and Hayes would amount to nothing more than combining known prior art elements according to known methods to yield predictable results and applying a known technique to a known device ready for improvement to yield predictable results. Thus, in view of the conventional remote control programming systems described in Lee, O'Donnell, and Hayes, a POSA would have easily combined the references and would have found it predictable to

form such a combination.

E. Substitute Claim 21

139. I have analyzed claim 21 based on the listing recited in Appendix A of the Revised Motion to Amend. I have also used the claim element designations recited in Appendix A.

1. Claim Elements 21-pre, 21[a], and 21[b]

140. Claim elements 21-pre, 21[a], and 21[b] recite:

- **21-pre** A method for providing interactive instructions to a user to set up a controlling device used to command a plurality of controllable appliances, the method comprising:
- **21[a]** providing on a first controllable appliance programming for the display of instructions to the user in response to input from the user via the controlling device;
- **21[b]** providing input by the user to the first controllable appliance via the controlling device indicating that the controlling device is to be set up to command a second controllable appliance;

141. Lee discloses claim elements 21-pre, 21[a], and 21[b] for the same reasons presented in my first declaration regarding claim elements [1.P], [1.1], and [1.2] respectively and for the same reasons presented in my second declaration regarding claim elements [21-pre], [21a], and [21b] respectively. EX1003, ¶¶218-

25; EX1034, ¶¶110-16. UEI has not amended these claim elements and has not revised them.

142. Lee discloses "a system 110 for remotely controlling electronic consumer devices." EX1016, 15:31-34. Figure 14 from Lee depicts an example of this system 110.

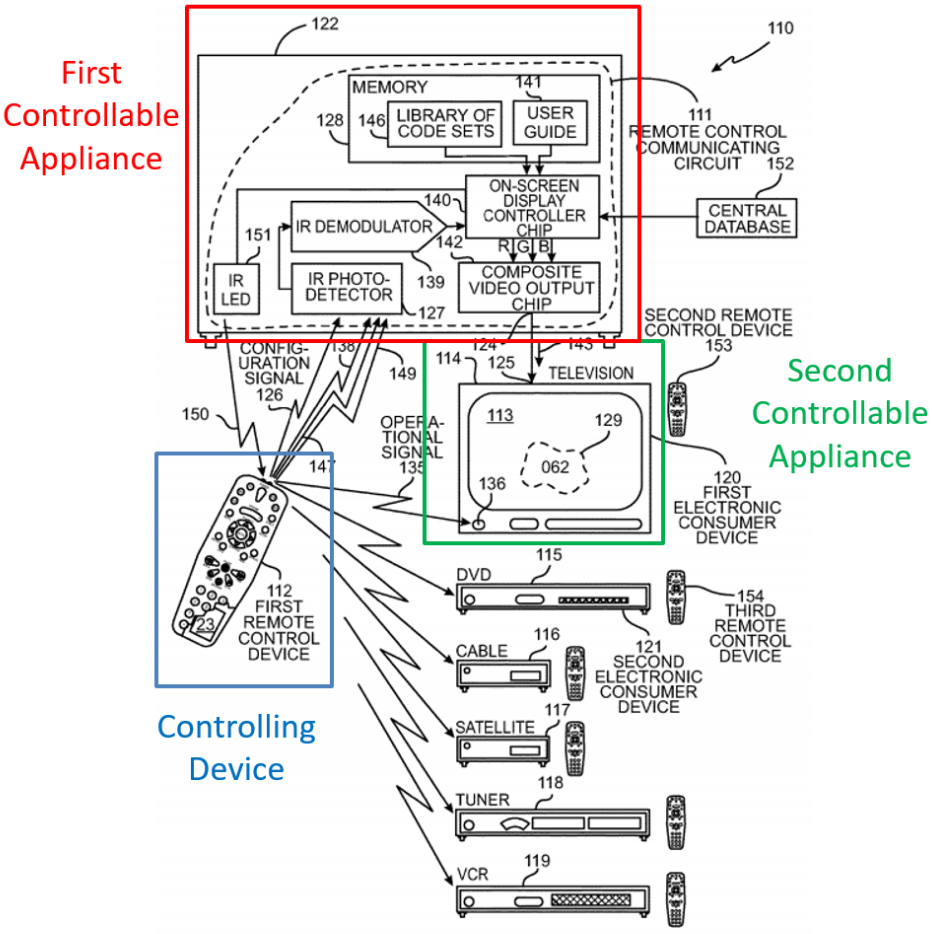


FIG. 14

EX1016, FIG. 14 (annotated).

143. As I previously explained, set-top box 122 teaches the claimed "first

controllable appliance," the user guide teaches the claimed "programming for the display of instructions," and the remote control device 112 teaches the claimed "controlling device." I have annotated the interaction between these system elements below in Figure 14 from Lee.

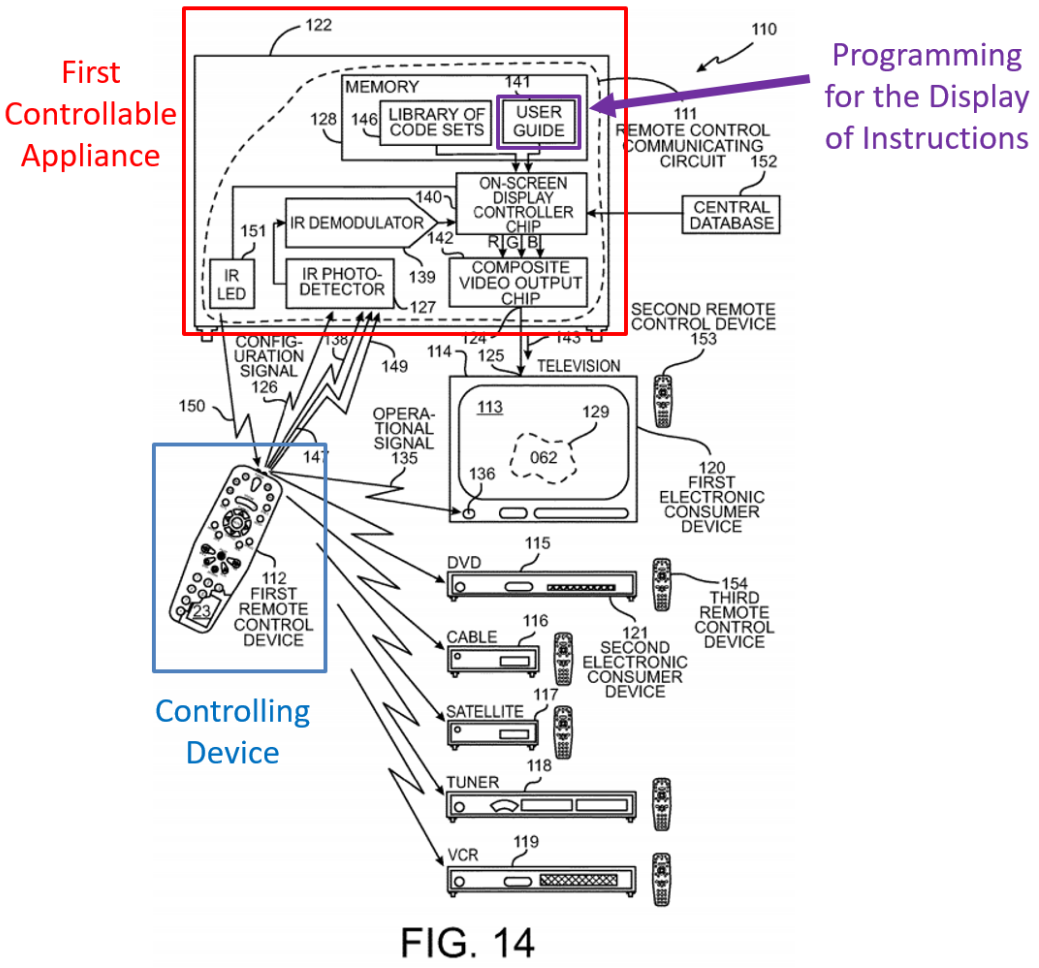
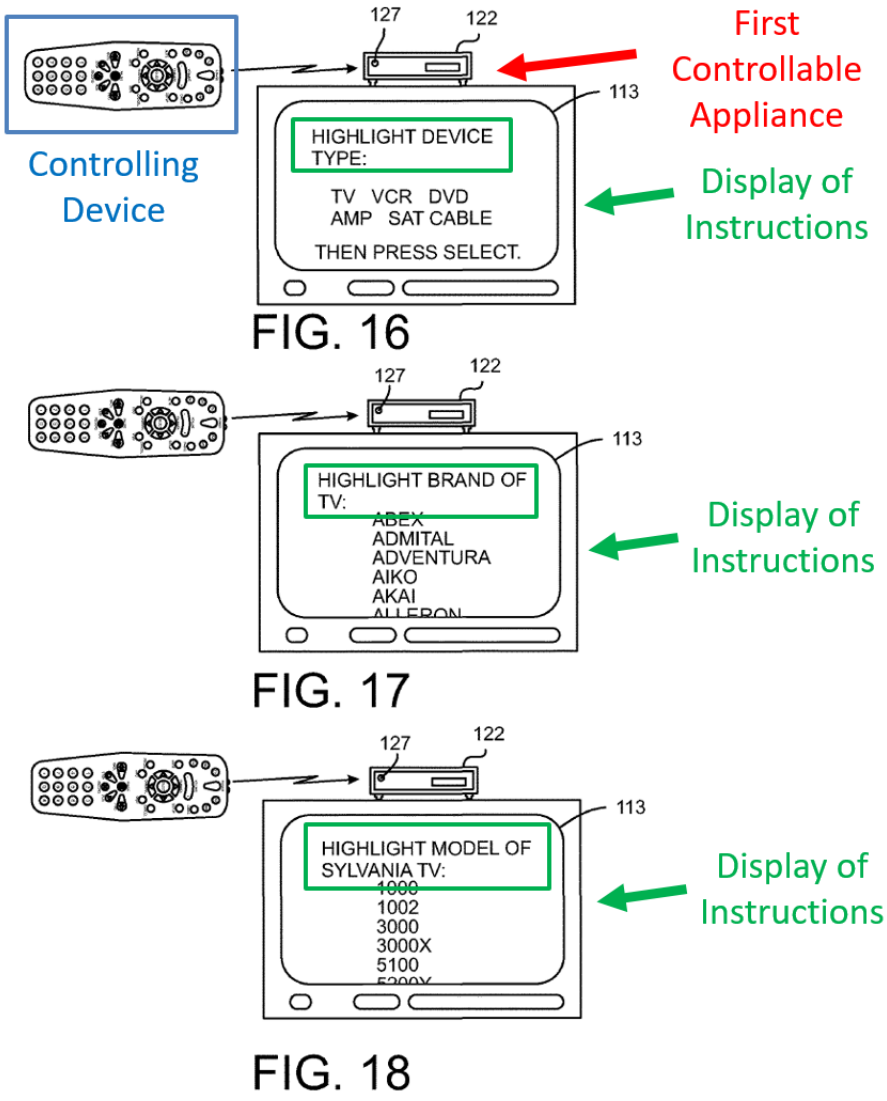


FIG. 14

EX1016, FIG. 14 (annotated).

144. The user guide prompts and instructs the user to use the remote control device 112 to select the type, brand, and model of the device the user wishes to control with the remote control device 112 (e.g., the first electronic consumer device

120 as shown in Figure 14). EX1016, 18:5-43. Figures 16-18, as reproduced below, provide examples of these prompts.



EX1016, FIGs. 16-18 (annotated).

145. Specifically, as shown in Figure 16, the remote control communicating circuit 111 first "prompt[s the user] to select the device type of first electronic consumer device 120 from among the options: TV, VCR, DVD, AMP, SAT and CABLE." EX1016, 18:7-9. After the user selects the device type (e.g., "TV"), the

user guide "prompts the consumer to select the brand of first electronic consumer device 120," as shown in Figure 17. *Id.*, 18:15-19. After the user selects the device brand (e.g., "Sylvania"), the user guide prompts the consumer to select a model of a "Sylvania" television the user wishes to control, as shown in Figure 18. *Id.*, 18:32-36. These prompts teach the claimed "display of instructions."

146. The user selects the device type, brand and model by navigating to the desired selection on the display 113 using the arrow keys 44 of the remote control device 112 and pressing the select key 145. *Id.*, 18:11-15. The various key presses for navigating the user interfaces and selecting the device type, brand, and model teach the "input by the user" recited in the claim. This input is provided to the set-top box 122 (i.e., the claimed "first controllable appliance") via the remote control device 112 (i.e., the claimed "controlling device"). *Id.*, 17:39-42, 18:11-15. The input indicates that the remote control device 112 is to be set up to command an electronic consumer device 120, which corresponds to the selected device type, brand, and model. *Id.*, 18:5-57. A POSA would have understood that the electronic consumer device 120 teaches the claimed "second controllable appliance."

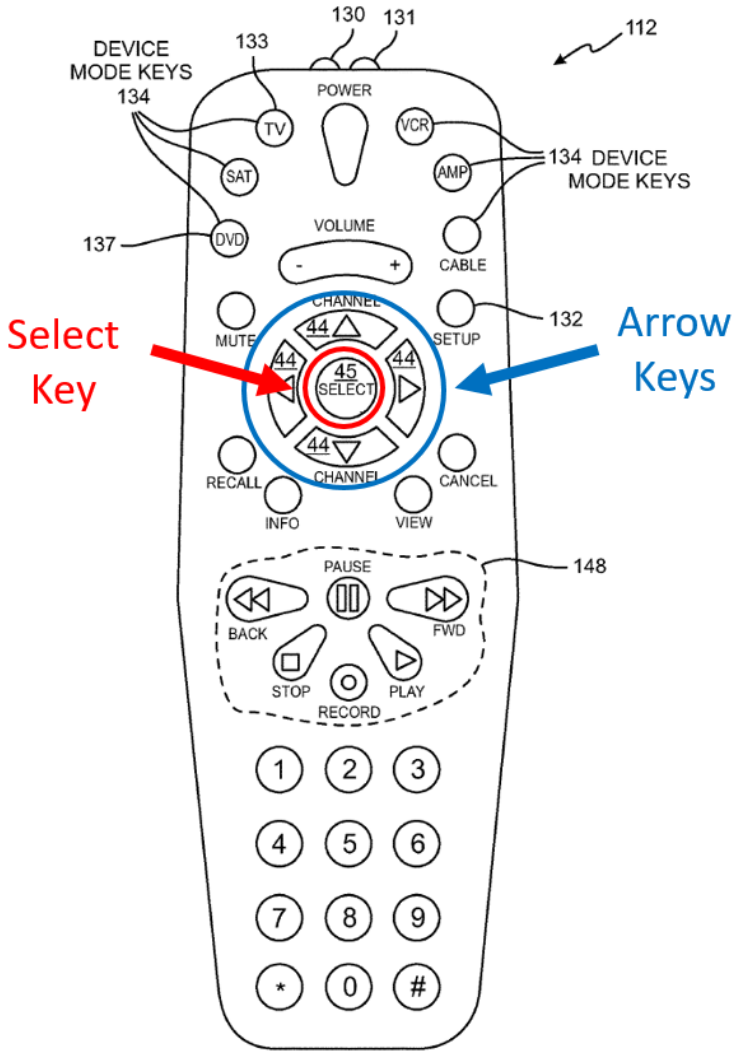


FIG. 15

EX1016, FIG. 15 (annotated).

2. Claim Elements 21[c] and 21[d]

147. Claim element 21[c] has been amended to generally recite "data" and claim element 21[d] has been added to indicate that the data identifies a first codeset associated with a type and brand of the second controllable appliance. Revised MTA, Appendix A. I have reproduced these claim elements below.

- **21[c]** accessing ~~instruction~~ data associated with the second controllable appliance by the programming provided on the first controllable appliance; ~~and~~
- **21[d]** <u>wherein the data associated with the second controllable appliance identifies a first codeset associated with the type or brand of the second controllable appliance; and</u>

148. Claim elements 21[c] and 21[d] are obvious for the reasons provided in my second declaration. EX1034, ¶¶117-21. Additionally, Lee first describes this functionality for the reasons presented with reference to claim element [1.3] as described in my first declaration. EX1003, ¶226. Once the user selects the device type, brand, and model, Lee's set-top box "displays a designation of a first code set on display 113," and prompts the user to press the keys corresponding to the designation. EX1016, 18:36-46. "[T]he designation of the first code set might be the three-digit decimal number '062', as shown in FIG. 14." *Id.*, 18:39-43. Entry of the designation via the remote control keys activates the first code set in the remote control device 112 so that the remote control device 112 can operate the electronic consumer device 120 (i.e., the claimed "second controllable appliance"). *Id.*, 18:44-51.

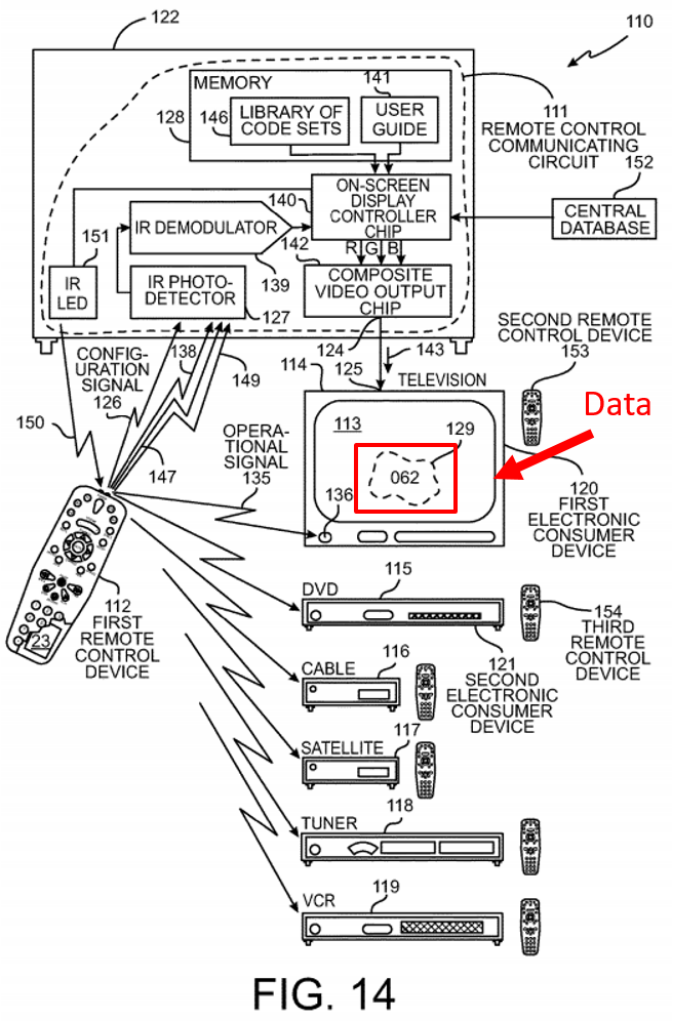


FIG. 14

EX1016, FIG. 14 (annotated).

149. Further, the user guide (i.e., the claimed "programming") causes the remote control communicating circuit 111 to access the designation of the first code set from the memory 128 of the remote control communicating circuit 111. EX1016, 18:24-31. This operation operates in the same way as the '962 application, which describes "displaying the remote control setup code number most likely to result in selection of an infrared code set." EX1011, 0013-14.

150. I understand that Dr. Rosenberg confirmed that the "data" of claim elements 21[c] and 21[d] refers to the remote control setup number that is displayed. EX1043, 25:11-20. For the reasons that I have explained, Lee describes accessing and displaying this same remote control setup number to identify a codeset corresponding to a type or brand of the selected second controllable appliance.

3. Claim Elements 21[e] and 21[f]

151. Claim elements 21[e] and 21[f] recite:

- **21[e]** in response to input by the user via the controlling device, accessing ~~displaying the~~ instruction data using ~~by~~ the programming provided on the first controllable appliance to display the instruction data for use by the user in setting up the controlling device to command the second controllable appliance using the first codeset;
- **21[f]** wherein the displayed instruction data comprises interactive instructions for the user to test at least one controllable function of the second controllable appliance by transmitting a command from the controlling device using a codeset under test and to indicate whether the test was successful in controlling at least one controllable function of the second controllable appliance by transmitting a command from the controlling device to the first controllable appliance using a third codeset corresponding with the first controllable appliance; and

152. The combination of Lee, O'Donnell, and Hayes discloses these claim elements.

153. As I previously explained, Lee discloses "an interactive, step-by-step user guide" that aids a user in configuring a remote control. EX1016, 15:37-40, 17:28-30. The user guide "causes certain text to be displayed in an interactive manner." *Id.*, 17:57-60. This therefore discloses the claimed instruction data including interactive instructions. As I previously explained with reference to claim elements 21[c] and 21[d], Lee's set-top box "displays a designation of a first code set on display 113," and prompts the user to press the keys corresponding to the designation. *Id.*, 18:34-46. "[T]he designation of the first code set might be the three-digit decimal number '062', as shown in FIG. 14." *Id.*, 18:39-43. In this manner, Lee discloses the display of instruction data for the user to set up the remote control to use a first codeset as recited in claim element 21[e].

154. The combination of Lee, O'Donnell, and Hayes discloses claim element 21[f]. A POSA would have been motivated to combine the codeset testing described in O'Donnell and Hayes with Lee for the reasons I explained in Section V.D.

155. Similar to Lee, O'Donnell also discloses "presenting interactive display menus," which discloses claim element 21[e] as well. EX1009, Abstract. The menus allow users to select "desired types, brands, and models" of appliances to control.

Id. Upon receiving selections from the user, O'Donnell displays instructions instructing the user to potentially try different codes and to test the codes to confirm controllable functions. *Id.*, 2:54-62, 3:23-32.

> You have selected a RCA brand VCR
> You will need to try a few formats of code. **17**
> (Or the television display may retrieve **16** available formats for the selected type and brand of appliance.)
> Please press the key indicated and check if the device responds (eg. 'play' for a VCR, or channel up for a cable box).
> To indicate the correct code, press and hold that key for 3 seconds

EX1009, 2:54-62.

156. O'Donnell provides another instruction example stating:

> "To verify that the URC will operate your TV, ***press VOLUME UP or DOWN*** (the most popular code for the brand selected would be programmed). If the TV responded, ***press OK on the URC***."
>
> "If the TV did not respond, press CH UP to advance to the next code."

EX1009, 3:25-28, 3:31-32 (emphasis added).

157. As seen from these passages, O'Donnell discloses interactive instructions directing a user to test a controllable function of a second controllable appliance. *Id.* This discloses "interactive instructions for the user to test at least one

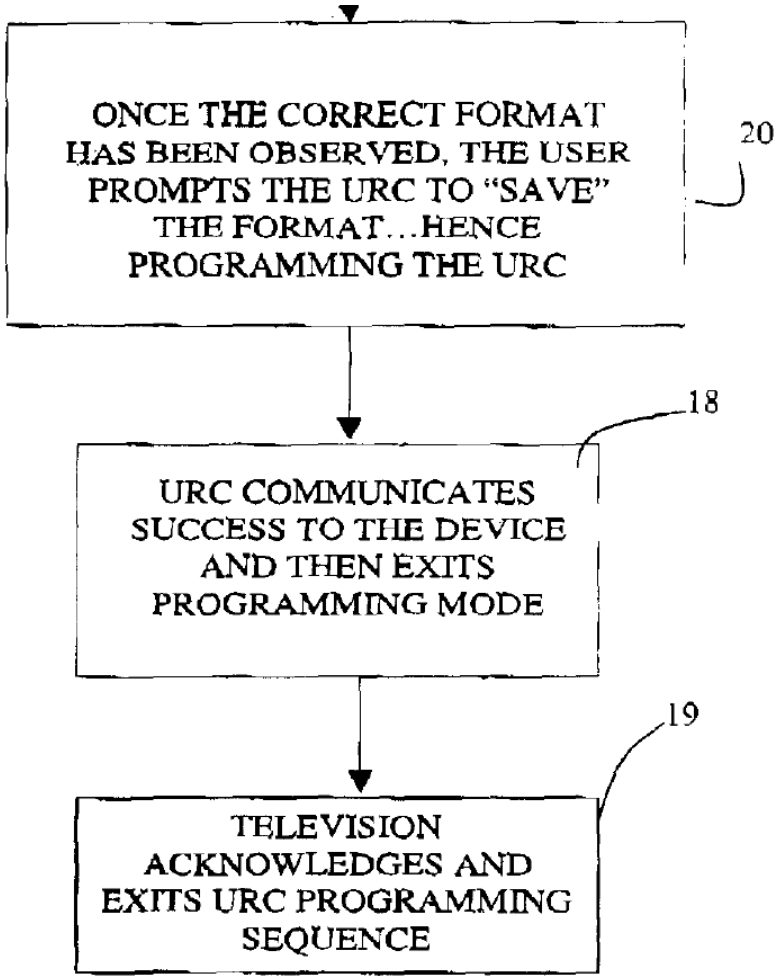
controllable function of the second controllable appliance by transmitting a command from the controlling device using a codeset under test" as recited in claim element 21[f].

158. O'Donnell also discloses instructing a user to indicate whether the test was successful in controlling a function of the second controllable appliance. For example, O'Donnell states:

> Once an unambiguous code is found, ***an "acknowledge" code is sent to the television by the URC***. The television may prompt the user to save the selected format 20. ***The URC may then signal success to the television***, causing the television to exit the programming mode 18, which may be acknowledged by the television, and which may cause the television to exit the interactive routine 19.

EX1009, 2:64-3:3 (emphasis added).

159. This is also depicted in Figure 1 of O'Donnell:



EX1009, FIG. 1 (excerpted).

160. O'Donnell's "acknowledge" code or signaling of success discloses the transmission of a success signal and the claimed indication of "whether the test was successful in controlling at least one controllable function of the second controllable appliance by transmitting a command from the controlling device to the first controllable appliance" as recited in claim element 21[f].

161. Hayes also discloses "interactive instructions for the user to test at least one controllable function of the second controllable appliance by transmitting a

command from the controlling device using a codeset under test and to indicate whether the test was successful in controlling at least one controllable function of the second controllable appliance." For example, as seen in Figure 25, Hayes depicts a designation of the device code being tested as well as command functions for the user to use for testing (e.g., power, mute, or digit). EX1041, ¶101. FIG. 25 depicts, an "indication of which function code set is being used in the testing procedure… via text 214." *Id.*

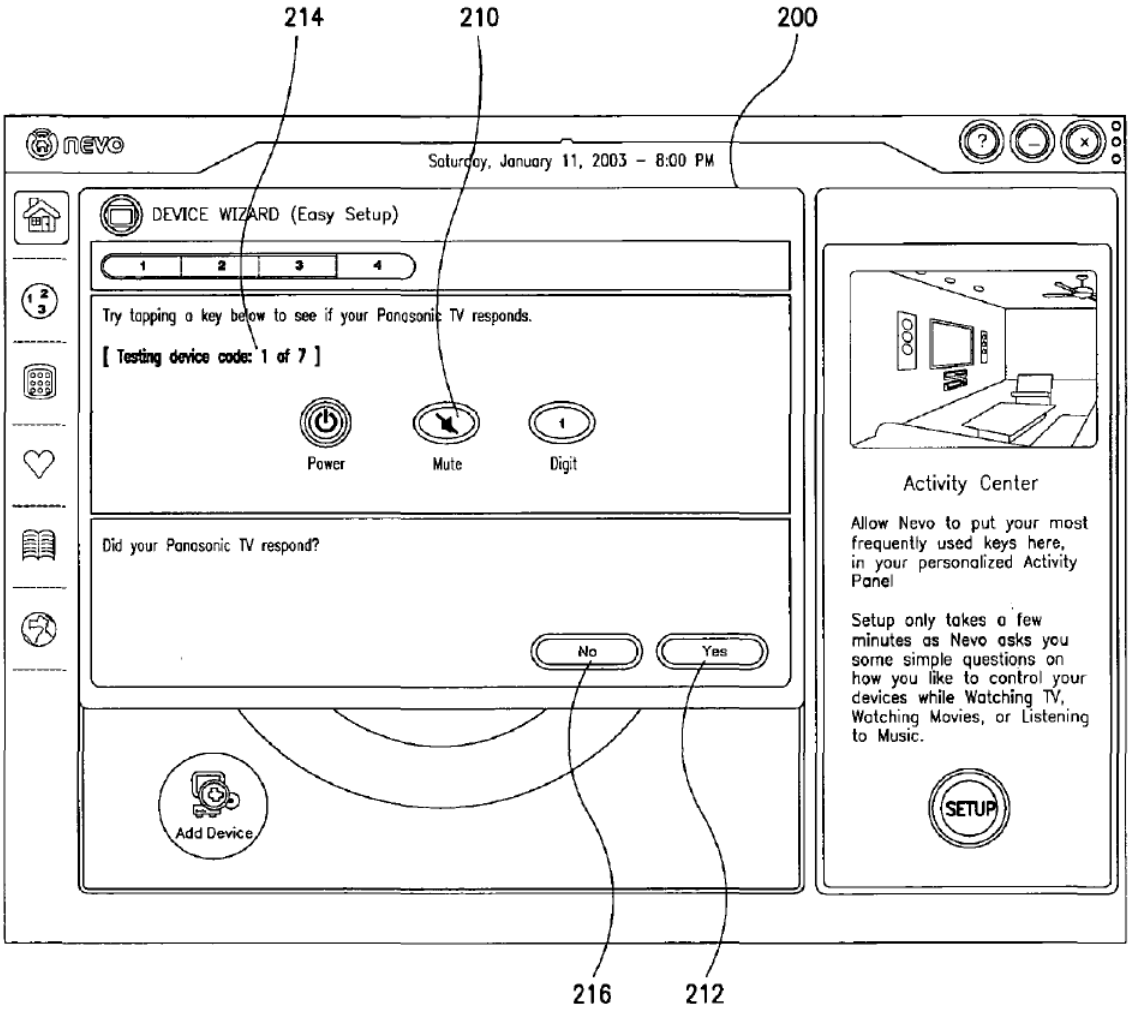


FIG. 25

EX1041, FIG. 25; EX1042, FIG. 25.

If the user transmits a command and the intended target device does respond as expected, ***the user may indicate the successful interaction between the remote control 10' and the target device, for example, by activating the "yes" icon 212***. An indication of a successful interaction between the setup wizard/remote control 10′ and the intended target device may then be used to lock the

> function codes for the function code set presently being utilized in the testing procedure to a device mode in the remote control 10′ which function codes are to be used to command the operation of the intended target device when the remote control 10′ is placed into that device mode.

EX1041, ¶101 (emphasis added).

162. In this manner, Hayes also describes "interactive instructions for the user to test at least one controllable function of the second controllable appliance by transmitting a command from the controlling device using a codeset under test and to indicate whether the test was successful in controlling at least one controllable function of the second controllable appliance" as recited in claim element 21[f].

163. The combination of Lee, O'Donnell, and Hayes also discloses transmitting an indication of success to the first controllable appliance "using a third codeset corresponding with the first controllable appliance." For example, the combination would use the "configuration code set" described in Lee to communicate with the first controllable appliance, such as Lee's set-top box. EX1016, 15:63-16:31, 17:36-47. Lee explains that "remote control device 112 is programmed to operate the various electronic consumer devices by activating certain code sets that are stored in a memory in first remote control device 112." *Id.*, 15:67-16:3. "In addition to code sets for the various electronic consumer devices, a ***configuration code set*** is also stored in memory of first remote control device 112."

Id., 16:8-10 (emphasis added). "The configuration code set is already activated when remote control set-top box 122 and the first remote control device 112 are supplied to the consumer." *Id.*, 16:10-13.

164. The set-top box 122 discloses the claimed first controllable appliance, and the configuration code set is used by the remote control to communicate with the set-top box. For example, when a user presses the "setup" key, the remote control transmits a "configuration signal 126" to the set-top box 122. *Id.*, 16:14-31. "Configuration signal 126 includes ***a code of the configuration code set*** that causes remote control communicating circuit 111 to display instructions as video text on display 113." *Id.*; *see also id.*, 17:42-44.

165. As seen from this description, Lee describes a "configuration code set" which is used by the remote control to communicate commands to the first controllable appliance. A POSA would have understood that the indication of successful testing as described in O'Donnell and Hayes would have similarly utilized Lee's configuration code set to "signal success" and to cause the first controllable appliance to exit the programming mode. EX1009, 2:64-3:3; EX1041, ¶101.

166. To the extent claim element 21[f] is interpreted to refer to a "command' instead of a "third codeset," Lee, O'Donnell, and Hayes disclose this as well. I note that the term "command" is broader than a "third codeset." Therefore, the same

disclosures from Lee, O'Donnell, and Hayes as I discussed above also disclose transmitting a general "command" corresponding to the first controllable appliance. For example, O'Donnell's signaling and/or Lee's configuration signal are examples of such a command that would correspond to a success indication as described in Hayes. Lee, O'Donnell, and Hayes therefore additionally disclose "transmitting a command from the controlling device to the first controllable appliance using a command corresponding to the first controllable appliance" as discussed by Dr. Rosenberg.

167. Thus, the combination of Lee, O'Donnell, and Hayes discloses claim elements 21[e] and 21[f]. A POSA would have been motivated to combine Lee, O'Donnell, and Hayes and would have known how to combine Lee, O'Donnell, and Hayes for the reasons that I explained in Section V.D.

4. Claim Element 21[g]

168. Claim element 21[g] recites:

- **21[g]** receiving, from the controlling device, an indication that a first test was unsuccessful in controlling at least one controllable function of the second controllable appliance using the first codeset;

169. The combination of Lee, O'Donnell, and Hayes discloses this claim element. The testing processes described in O'Donnell and Hayes describe the scenario where the first test corresponding to the first codeset was unsuccessful in

controlling a function of the second controllable appliance.

170. For example, O'Donnell describes the communication of an indication of failure (i.e., the first test was unsuccessful) from a remote control to a first controllable appliance. EX1009, FIG. 1. This occurs when one or more codeset are unsuccessful at commanding a second controllable appliance. *Id.*, FIG. 1, 3:35-38 (describing the communication of a failure code).

NOTE 1: IF CORRECT FORMAT WASN'T OBSERVED AFTER ALL FORMATS FOR THE BRAND TO BE CONTROLLED HAVE BEEN TRIED, URC COMMUNICATES FAILURE AND EXITS PROGRAMMING MODE. THE DEVICE THEN INDICATES THAT THE PARTICULAR BRAND CAN'T BE CONTROLLED AND EXITS URC PROGRAMMING SEQUENCE.

EX1009, FIG. 1 (excerpted, annotated).

171. While O'Donnell focuses on communicating failure from the remote control to a first controllable appliance after potentially attempting multiple codesets, Hayes describes the communication of failure after attempting each codeset. EX1041, ¶102, FIG. 25, FIG. 28. For example:

> In the case where the intended target device does not respond to a transmitted command as expected, the user can elect to ***try one or more function codes from a further function code set, for example, by activating the "no"***

> ***icon 216***, to see if the intended target device responds to any further transmitted function codes.

EX1041, ¶102 (emphasis added).

172. The system then cycles through additional "available function code sets for the specified device and brand." *Id.*, ¶102. The user then continues testing until a response is detected. *Id.*, ¶¶102-03. An example of cycling through different remote control setup codes as well as testing functions of different code sets is depicted in Figure 28.

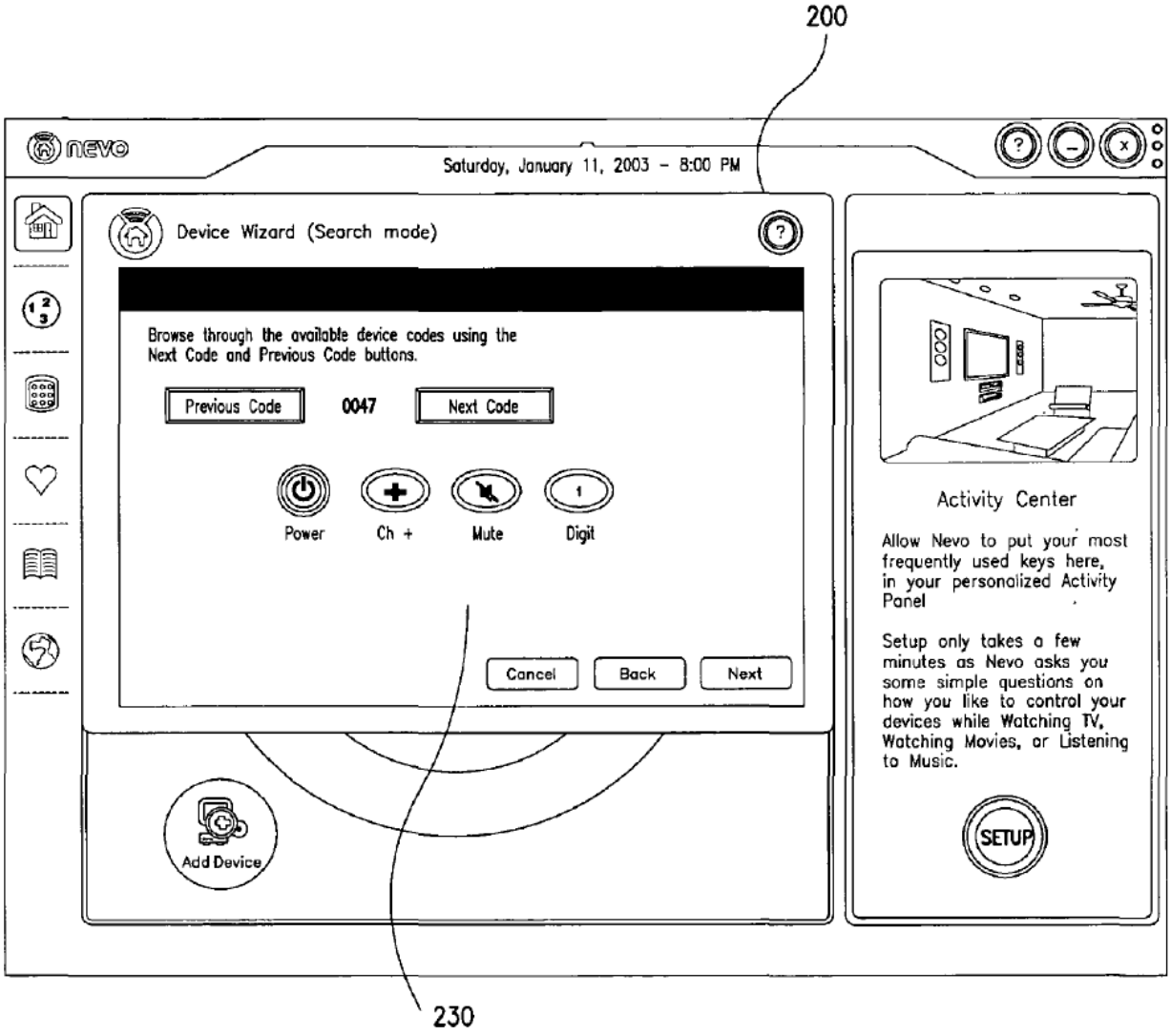


FIG. 28

EX1041, FIG. 28; EX1042, FIG. 28.

173. In this combination of Lee, O'Donnell, and Hayes, a POSA would have used O'Donnell's communication signals to provide an indication that a test was unsuccessful to inform a first controllable appliance (such as Lee's set top box). This would occur after each codeset is tested as described in Hayes. In the combination,

in response to receiving the indication of failure, another remote control setup code would be displayed as depicted in Figure 28 of Hayes and as described in Lee. EX1016, 18:35-57. A POSA would have been motivated to implement the testing process and functionality described in O'Donnell and Hayes with Lee for the reasons I explained in Section V.D.

5. Claim Elements 21[h.0], 21[h.1], and 21[h.2]

174. Claim elements 21[h.0], 21[h.1], and 21[h.2] recite:

- **21[h.0]** based at least in part on the indication that the first test was unsuccessful:
- **21[h.1]** (1) accessing the data associated with the second controllable appliance by the programming provided on the first controllable appliance, wherein the data associated with the second controllable appliance additionally identifies a second codeset associated with the type or the brand of the second controllable appliance; and
- **21[h.2]** (2) accessing instruction data using the programming provided on the first controllable appliance to display the instruction data for use by the user in setting up the controlling device to command the second controllable appliance using the second codeset;

175. As I described with reference to claim element 21[g], the combination of Lee, O'Donnell, and Hayes would address the situation where the first test was

unsuccessful. For example, O'Donnell and Hayes describe receiving an indication that a test for a codeset was unsuccessful. EX1009, FIG. 1, 3:35-38; EX1041, ¶¶102-03, FIG. 25, FIG. 28.

176. In response to such an indication, Hayes describes accessing another device code corresponding to another "function code set." EX1041, ¶101. For example, after the user has activated the "'no' icon 216" to indicate that the test was unsuccessful, the system then cycles through additional "available function code sets for the specified device and brand." *Id.*, ¶102. Figure 25 depicts an indication of the particular number of the device code being tested while Figure 28 displays the remote control setup number that is being tested.

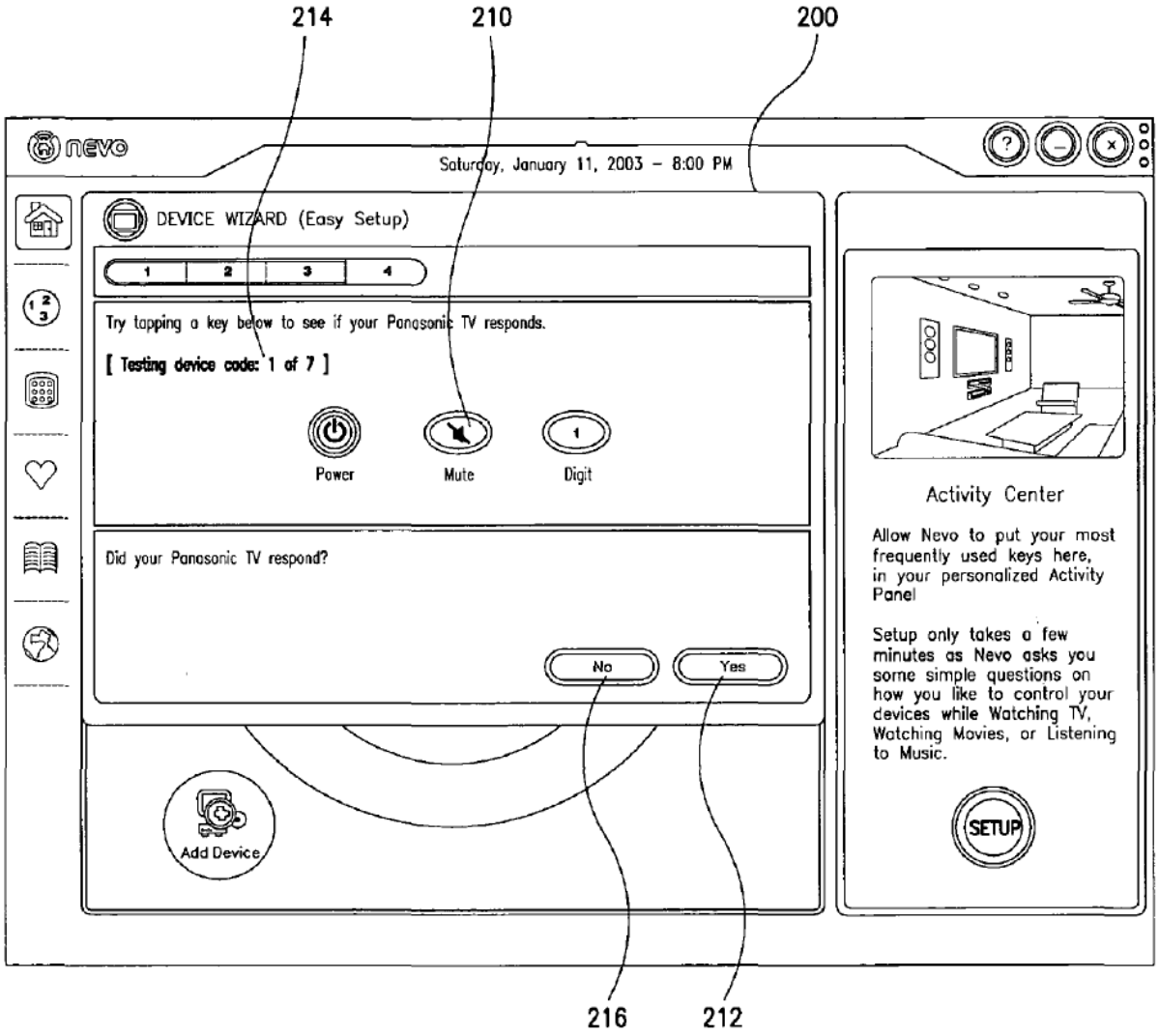


FIG. 25

EX1041, FIG. 25; EX1042, FIG. 25.

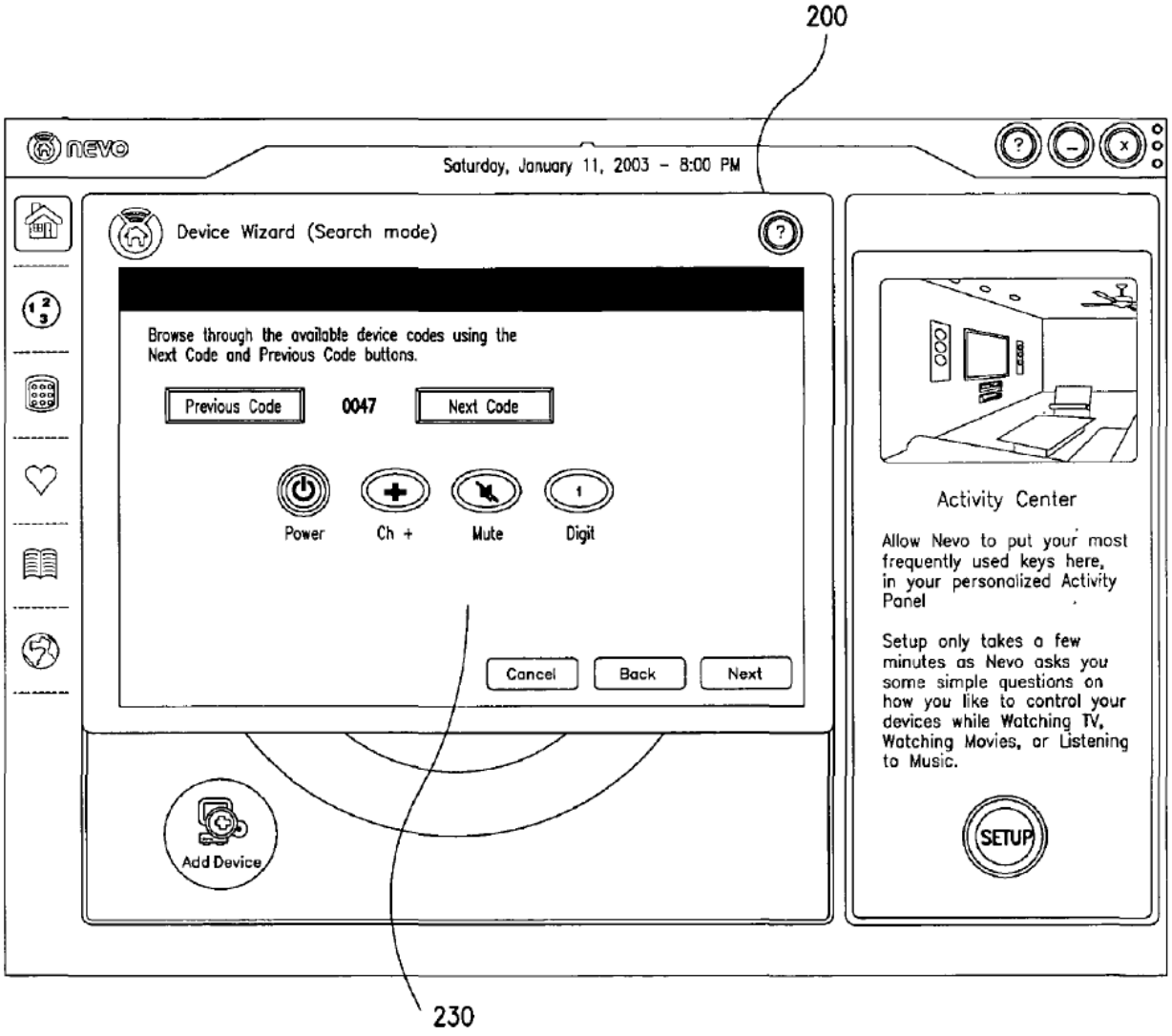


FIG. 28

EX1041, FIG. 28; EX1042, FIG. 28.

177. Focusing on Figure 28, the cycling through of different setup codes describes additionally identifying "a second codeset associated with the type or the brand of the second controllable appliance" as recited in claim element 21[h.1]. A POSA would have found it obvious and would have been motivated to implement a

similar graphical user interface and cycling of different remote control setup codes with Lee and O'Donnell for the reasons I explained in Section V.D. For example, O'Donnell also describes cycling through different codesets for a particular selected brand until the user has observed successful testing. EX1009, FIG. 1 (Box 17).

178. In the combination, Lee would implement a similar graphical user interface as shown in Figure 28 to cycle through multiple potential remote control setup codes. For example, Lee already describes being capable of displaying multiple remote control setup codes. EX1016, 19:14-27 ("remote control communicating circuit 111 causes a designation of a second code set to be displayed on display 113…. In a step 168, the consumer is prompted to activate the second code set by pressing keys on the first remote control device 112 to enter the designation of the second code set. The designation of the second code set is, for example, the three-digit decimal number '022.'")

179. Lee would be configured to display multiple remote control setup codes in a manner similar to the graphical user interface depicted in Figure 28 of Hayes. This would identify a second codeset for a particular type or brand of the second controllable appliance as described in 21[h.1]. Similarly, Lee would display this second remote control setup number to allow a user to setup the remote control to use the second codeset. The testing of this second codeset would be performed in a manner similar to O'Donnell and Hayes as I described above with reference to claim

elements 21[e] and 21[f]. *See* Section V.E.3. In this manner, the combination would implement Hayes's cycling and display of different device codes with Lee to instruct a user to test multiple codesets for a specified type and brand of device. This would occur in response to an indication that the first codeset was unsuccessful as described in Hayes. EX1041, ¶¶102-03, FIG. 25, FIG. 28. Thus, the combination of Lee, O'Donnell, and Hayes discloses claim elements 21[h.0], 21[h.1], and 21[h.2].

180. I understand that Patent Owner has argued that a POSA would not have been motivated to combine Lee and O'Donnell because Lee "is able to identify a specific code for a specific model of a device" and therefore does not need to determine "a second code should the first code fail to control the electronic consumer device." Revised MTA, 21. This is impractical based on the knowledge of a POSA and an understanding that specified types and brands of devices commonly included multiple remote control setup numbers. *See* Section II.F.

181. As acknowledged by Dr. Rosenberg, oftentimes many potential setup codes would have existed for a potential type or brand of device. EX1043, 80:8-21. This is why a POSA would have found it obvious to test and try multiple code sets as I described in Section II.F. Therefore, Patent Owner's argument that Lee is able to identify the single correct codeset without the need for testing does not address the well-known issue in the art that multiple potential codes existed for a given type or brand. *See* Section II.F. Therefore, as I explained in Section V.D, a POSA would

have been motivated to combine Lee, O'Donnell, and Hayes to provide a robust testing process to ensure proper programming of the remote control to command the target device or second controllable appliance.

6. Claim Element 21[i]

182. Claim element 21[i] recites:

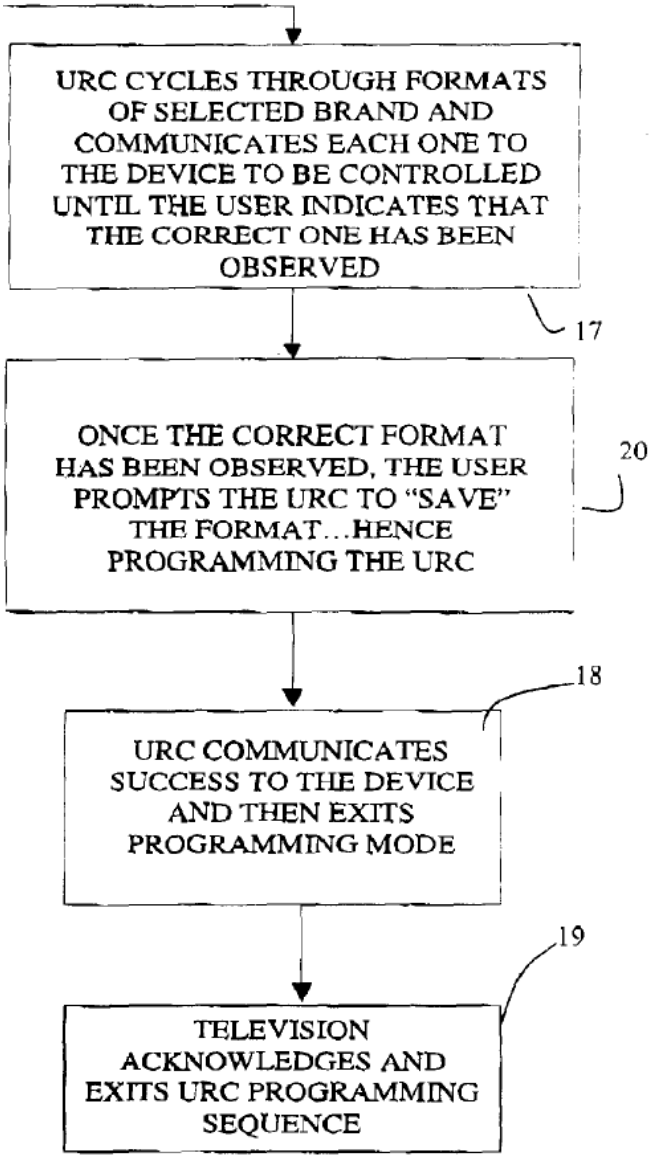
- **21[i]** receiving, from the controlling device, an indication that a second test was successful in controlling at least one controllable function of the second controllable appliance using the second codeset; and

183. The combination of Lee, O'Donnell, and Hayes discloses receiving an indication of a successful test for the reasons that I explained with respect to claim elements 21[e] and 21[f]. *See* Section V.E.3. For example, O'Donnell discloses instructing a user to indicate whether the test was successful in controlling a function of the second controllable appliance. For example, O'Donnell states:

> Once an unambiguous code is found, ***an "acknowledge" code is sent to the television by the URC***. The television may prompt the user to save the selected format 20. ***The URC may then signal success to the television***, causing the television to exit the programming mode 18, which may be acknowledged by the television, and which may cause the television to exit the interactive routine 19.

EX1009, 2:64-3:3 (emphasis added).

184. This is also depicted in FIG. 1 of O'Donnell, which also describes the user cycling through multiple formats for a selected brand until a correct one has been observed (Box 17):



EX1009, FIG. 1 (excerpted).

185. O'Donnell's "acknowledge" code or signaling of success discloses the

transmission and receipt of an indication that testing was successful in controlling a function of the second controllable appliance. In the combination, this same acknowledgement signal would be transmitted by the remote control and received at a set-top box when testing a second codeset. *See* Section V.E.5.

186. Hayes also discloses generating an "indication that a second test was successful in controlling at least one controllable function of the second controllable appliance using the second codeset" as recited in 21[i]. For example, as seen in Figure 25, Hayes depicts a designation of the device code being tested as well as command functions for the user to use for testing (e.g., power, mute, or digit). EX1041, ¶101. Figure 25 depicts, an "indication of which function code set is being used in the testing procedure… via text 214." *Id.*

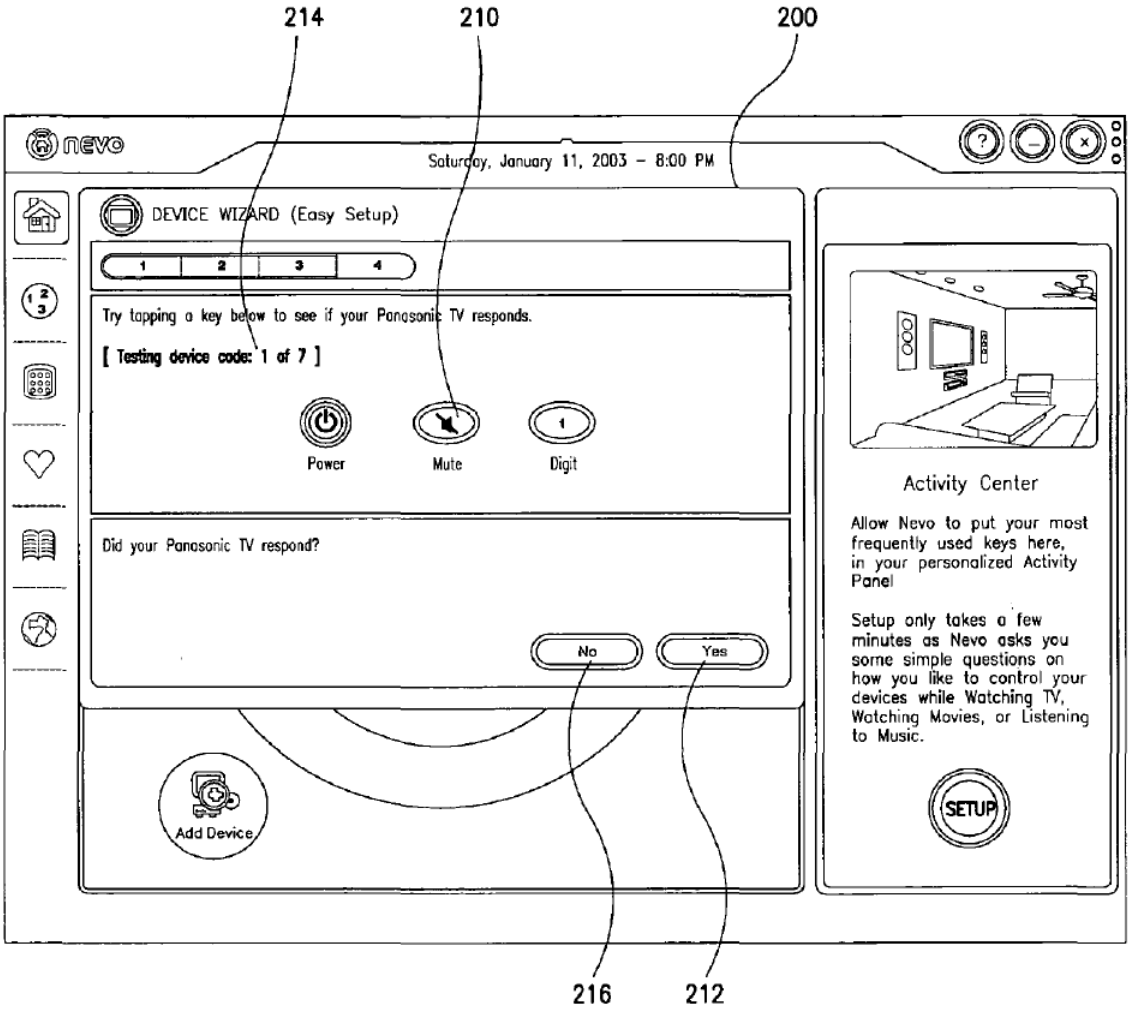


FIG. 25

EX1041, FIG. 25; EX1042, FIG. 25.

If the user transmits a command and the intended target device does respond as expected, ***the user may indicate the successful interaction between the remote control 10' and the target device, for example, by activating the "yes" icon 212***. An indication of a successful interaction between the setup wizard/remote control 10′ and the intended target device may then be used to lock the

> function codes for the function code set presently being utilized in the testing procedure to a device mode in the remote control 10′ which function codes are to be used to command the operation of the intended target device when the remote control 10′ is placed into that device mode.

EX1041, ¶101.

187. Hayes also depicts the testing of multiple potential codesets in Figure 28. The "Previous Code" button demonstrates that the current code under test, which may be successful, would have corresponded to a second codeset.

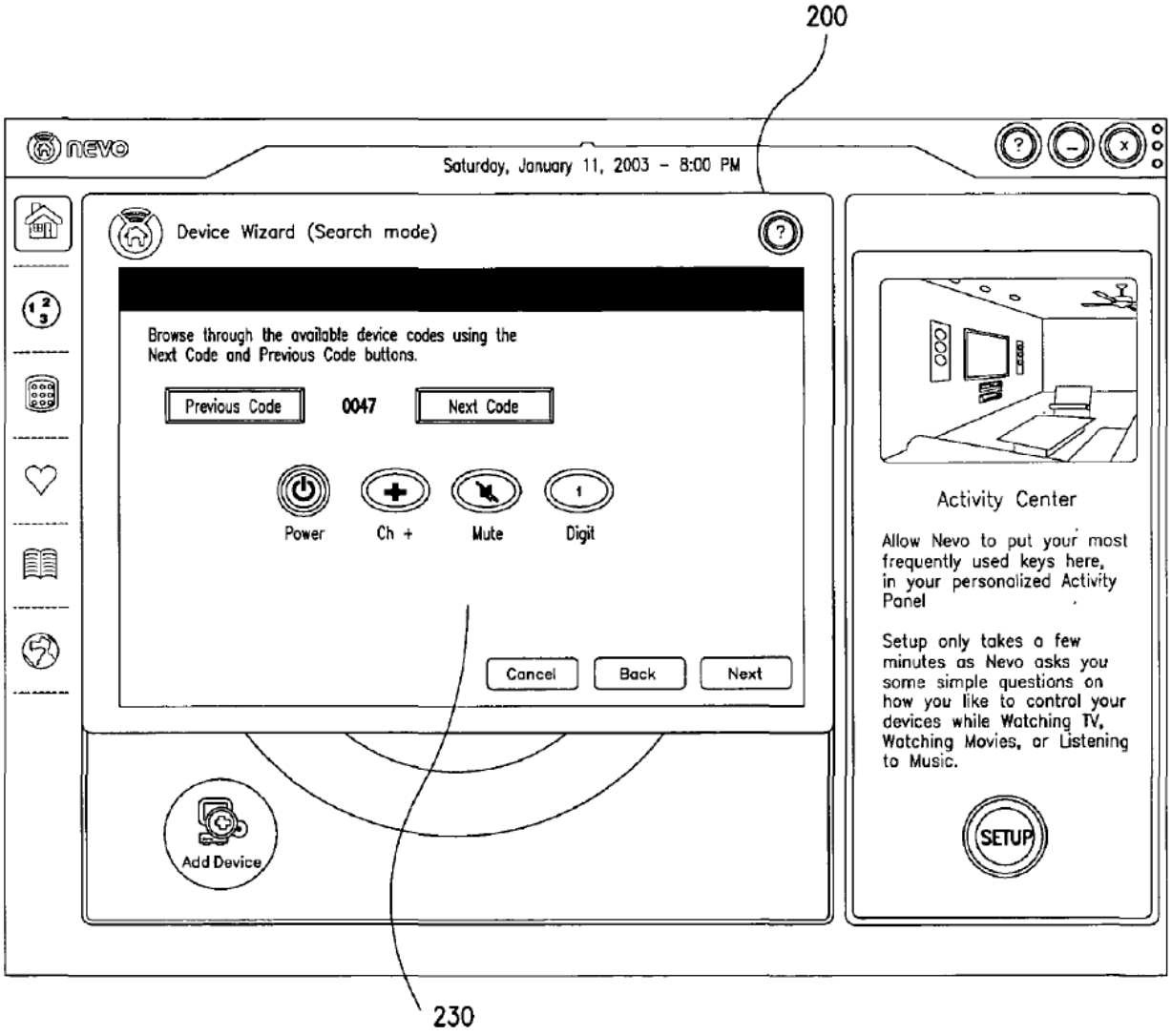


FIG. 28

EX1041, FIG. 28; EX1042, FIG. 28.

188. In this manner, Hayes also describes providing an indication that a second test corresponding to a second codeset was successful as recited in claim element 21[i]. In the combination, a signal such as the one described in O'Donnell would indicate the success of the testing of the second codeset. This signal would be

received, for example, by Lee's set-top box. A POSA would have been motivated to combine Lee, O'Donnell, and Hayes for the reasons that I explained in Section V.D.

7. Claim Element 21[j]

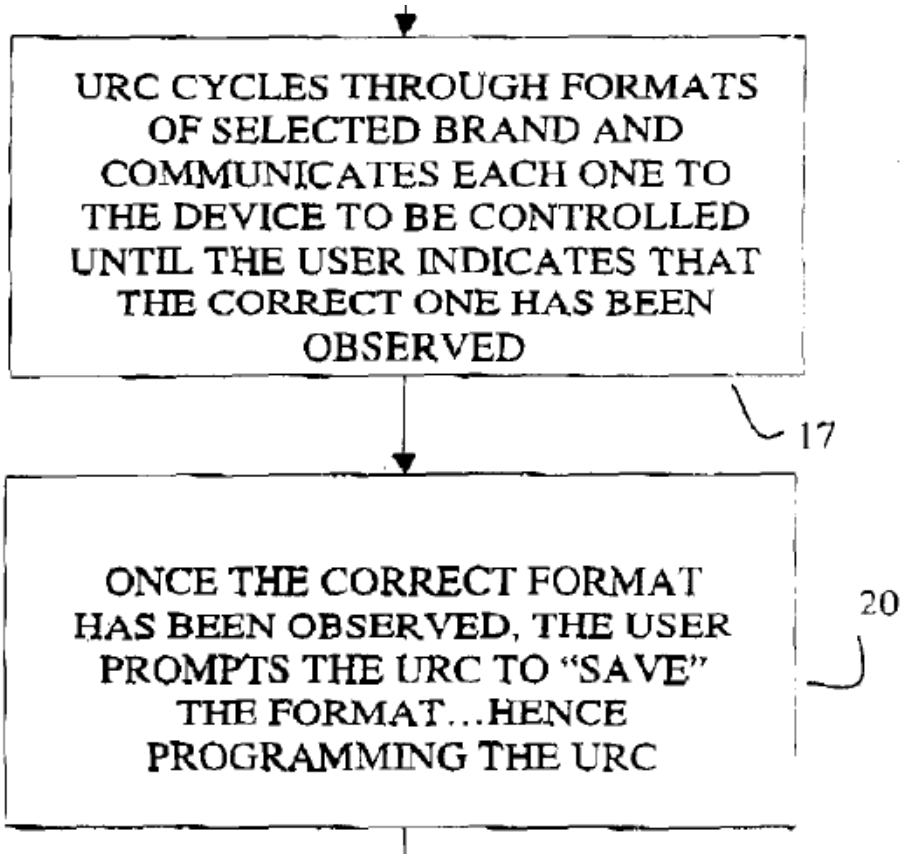
189. Claim element 21[j] recites:

- **21[j]** <u>configuring the second codeset associated with the second test to the controlling device in response to the user indicating the second test was successful.</u>

190. The combination of Lee, O'Donnell, and Hayes discloses claim element 21[j]. I understand that Dr. Rosenberg explained during his deposition that the claimed "configuring" occurs at the remote control device and amounts to setting the second codeset within the remote control device for subsequent use. EX1043, 64:22-65:12, 75:4-11. I agree with this interpretation of the claims.

191. As I previously explained, Lee's set-top box "displays a designation of a first code set on display 113," and prompts the user to press the keys corresponding to the designation. EX1016, 18:34-46. The user enters the displayed remote control setup code to configure the remote control.

192. O'Donnell further explains that a codeset that has been successfully tested is saved to the remote control, and therefore configures the remote control to use that codeset. For example, O'Donnell describes saving the codeset that resulted in a successful test as depicted at 17 and 20 in Figure 1.



EX1009, FIG. 1 (excerpted).

193. "Once an unambiguous code is found, an 'acknowledge' code is sent to the television by the URC. ***The television may prompt the user to save the selected format 20***." EX1009, 2:64-66 (emphasis added).

194. Hayes describes configuring the remote control in a similar manner when a user has activated a "yes" button to indicate successful testing:

> An indication of a successful interaction between the setup wizard/remote control 10′ and the intended target device ***may then be used to lock the function codes for the***

> ***function code set presently being utilized*** in the testing procedure to a device mode in the remote control 10′ which function codes are to be used to command the operation of the intended target device when the remote control 10′ is placed into that device mode.

EX1041, ¶101 (emphasis added).

195. In this manner, Hayes also discloses configuring the codeset to the remote control device based on successful testing of the codeset. A POSA would have understood that this codeset would be the second codeset when the second codeset is tested following the unsuccessful testing of the first codeset for the reasons that I explained with reference to claim elements 21[g], 21[h.0], 21[h.1], 21[h.2], and 21[i]. *See* Sections V.E.4-6. A POSA would have been motivated to combine Lee, O'Donnell, and Hayes and would have understood that the combination would configure the remote control device to use the second codeset in response to successful testing to achieve the benefits that I described above. *See* Section V.D.

F. Claim 22: The method as recited in claim 21 wherein the controllable function of the second controllable appliance consists of a power, volume, or channel up/down function of the second controllable appliance.

196. Claim 22 recites the tested controllable function consisting of a "power, volume, or channel up/down function." Revised MTA, Appendix A. O'Donnell's testing explicitly recites instructing the user to "press VOLUME UP or DOWN" to

verify that the remote control will operate the user's TV. EX1009, 3:25-28, 3:31-32.

O'Donnell also discloses using the channel up button to test functionality:

> You have selected a RCA brand VCR
> You will need to try a few formats of code. **17**
> (Or the television display may retrieve **16** available formats for the selected type and brand of appliance.)
> Please press the key indicated and check if the device responds (eg. 'play' for a VCR, or channel up for a cable box).
> To indicate the correct code, press and hold that key for 3 seconds

EX1009, 2:54-62.

197. Hayes also discloses testing a power function as depicted in Figure 25. EX1041, ¶101, FIG. 25.

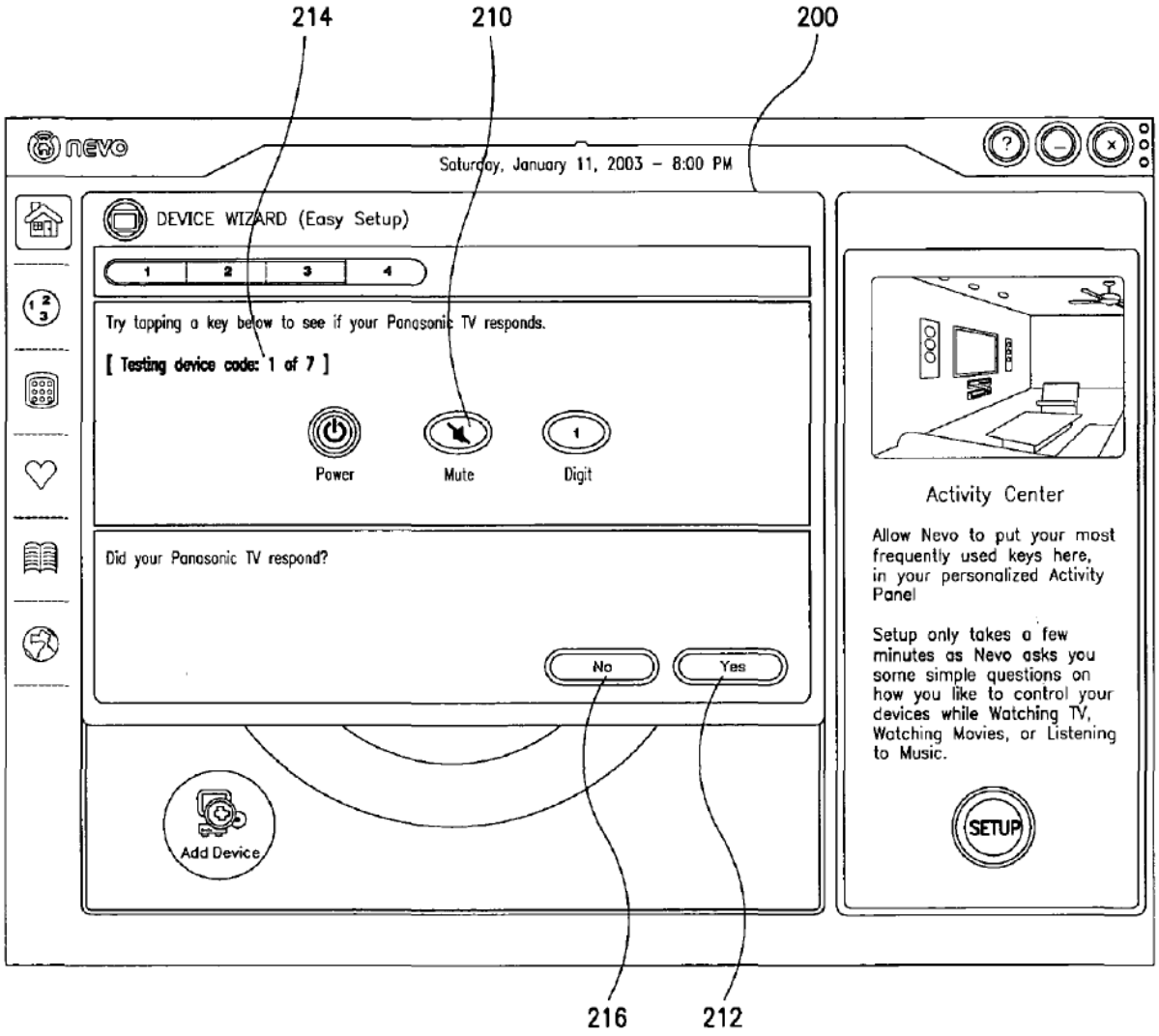


FIG. 25

EX1041, FIG. 25; EX1042, FIG. 25.

198. Thus, O'Donnell and Hayes disclose claim 22.

G. Claim 23: The method as recited in claim 21 wherein the data associated with the second controllable appliance further comprises a third codeset associated with the type or brand of the second controllable appliance when the user indicates that

the second codeset was unsuccessful in controlling at least one controllable function of the second controllable appliance.

199. Claim 23 recites identifying a third codeset when the user indicates that the testing the second codeset was unsuccessful. Revised MTA, Appendix A. As I previously explained, claim 23 conflicts with claim 21, which requires that the second codeset is successful. *See* Section IV. Regardless, the combination of Lee, O'Donnell, and Hayes still renders obvious another third codeset used to communicate with the second controllable appliance when a second codeset is unsuccessful.

200. For example, O'Donnell's testing explicitly recites the testing of multiple codes and codesets by instructing the user with: "If the TV did not respond, press CH UP to ***advance to the next code***." EX1009, 3:31-32 (emphasis added). "The URC would advance to the next most-popular table for the brand selected and repeat the verification process." *Id.*, 3:33-34. Thus, O'Donnell describes "data" comprising multiple codesets (including a second and third codeset) to try when testing is unsuccessful.

201. Hayes also describes cycling through multiple code sets to try. For example, as depicted in Figure 25, Hayes describes the testing of potential seven device codes when indicating that it is currently "Testing device code: 1 of 7." EX1041, FIG. 25; EX1042, FIG. 25. In this manner, Hayes also discloses testing

multiple codesets including a third codeset.

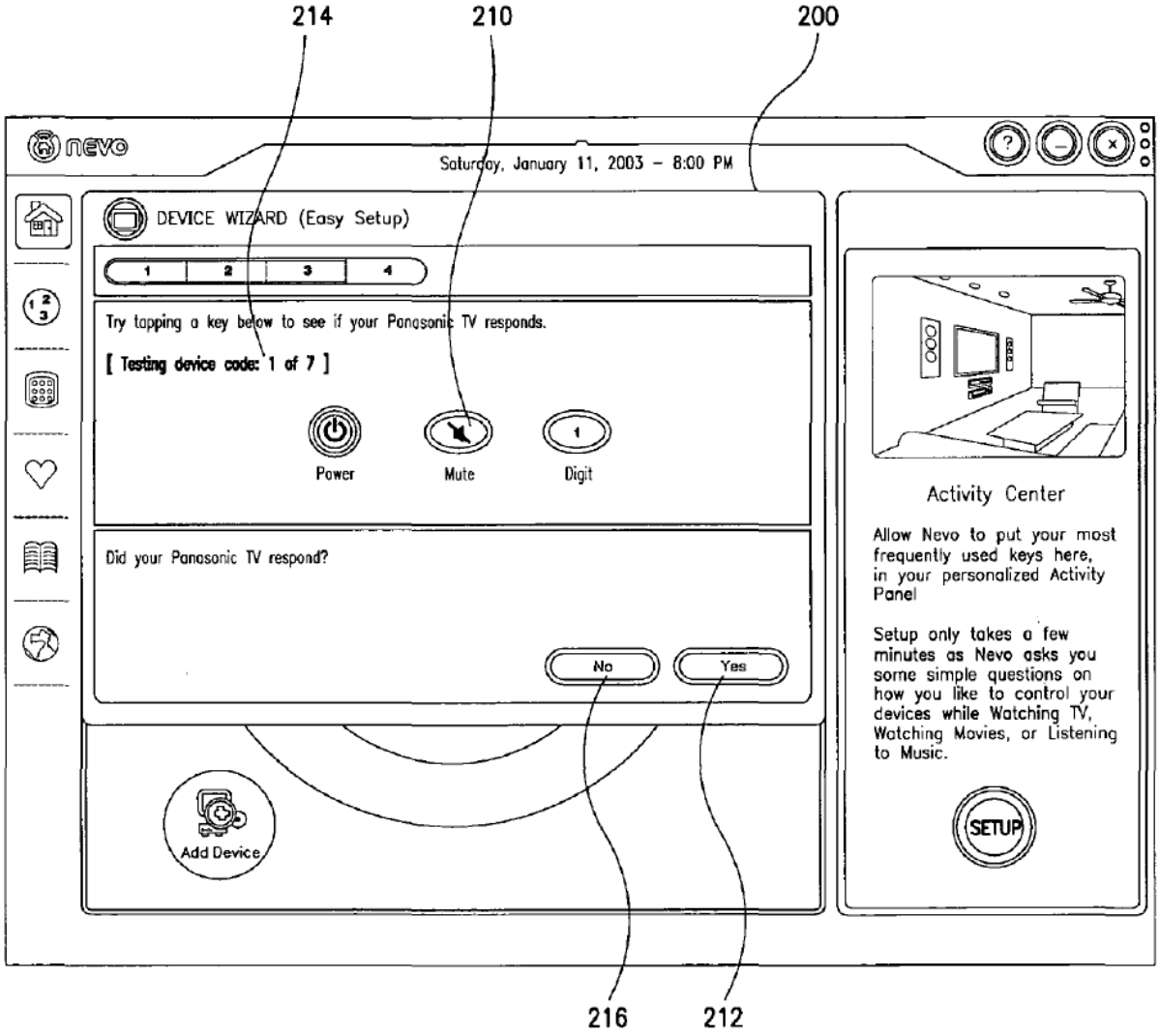


FIG. 25

EX1041, FIG. 25; EX1042, FIG. 25.

202. In the combination, Lee's set-top box 122 includes the additional codesets to facilitate O'Donnell's and Hayes's continued testing. Indeed, Lee's STB 122 already manages multiple codesets and codeset data for programming the remote control device. EX1016, 19:14-27 ("In a step 167, remote control

communicating circuit 111 causes a designation of a second code set to be displayed on display 113. The second code set corresponds to the second electronic consumer device that the consumer has selected . . . . The designation of the second code set is, for example, the three-digit decimal number '022.'") In this manner, a POSA would have been motivated and would have found combining Lee, O'Donnell, and Hayes to be a predictable combination of known prior art elements according to known methods to yield predictable results. *See* Section V.D.

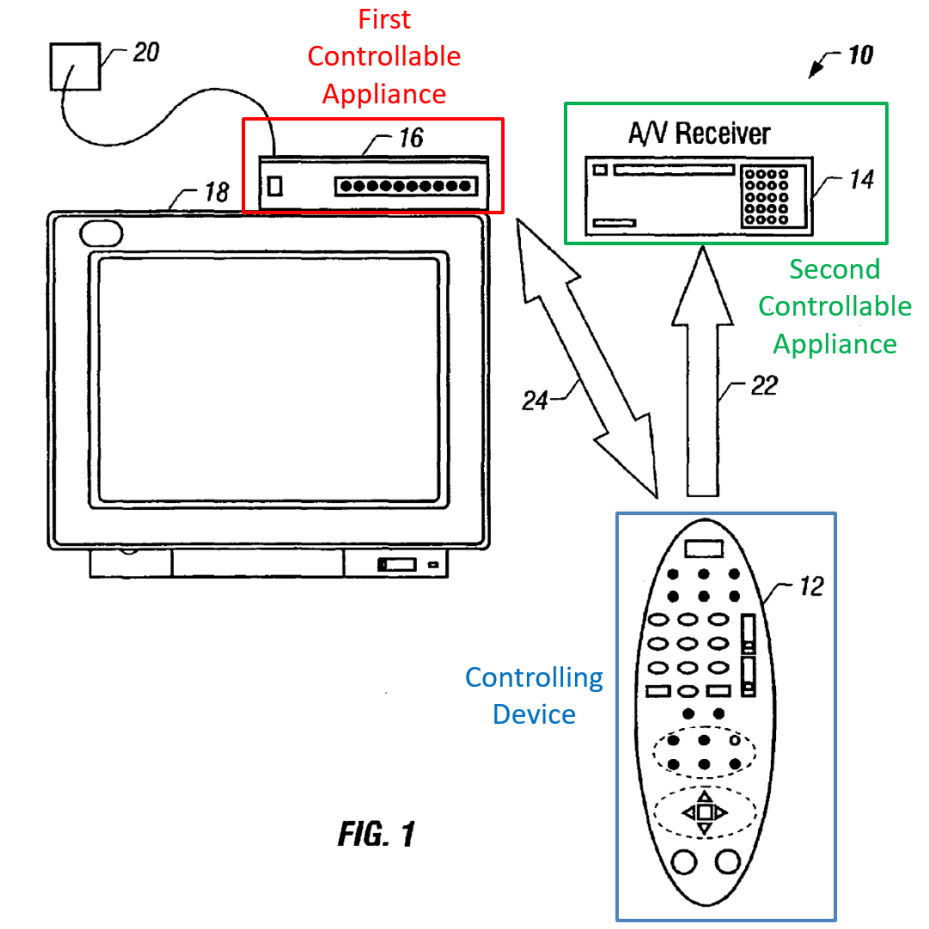
VI. SUBSTITUTE CLAIMS 21-23 ARE UNPATENTABLE AS OBVIOUS UNDER 35 U.S.C. § 103 IN VIEW OF MARTIS, SVR-3000, AND HAYES

203. Substitute claims 21-23 are unpatentable over Martis (EX1007), SVR-3000 (EX1039), and Hayes (EX1041). As I explained in my first and second declarations, both Martis and SVR-3000 describe configuring a remote control by presenting interactive instructions to guide a user. EX1003, ¶¶71, 73-74, 77, 88-92, 104, 267; EX1034, ¶¶136-69. Similarly, Hayes also describes presenting interactive instructions to guide a user to configure a remote control device as I previously explained and further explain below. As such, Martis, SVR-3000, and Hayes are in the same technological field as the '514 patent and the '962 Application. Thus, the combination of Martis, SVR-3000, and Hayes renders claims 21-23 obvious.

A. Overview of Martis

204. Like the '514 Patent and the '962 application, Martis describes a

system that provides the "necessary conversion information" to "enable a remote control device to control a number of different consumer electronic devices." EX1007, Abstract. Similarly, Martis describes "[a] system 10 for commonly controlling electronic devices." *Id.*, ¶14.



EX1007, FIG. 1 (annotated).

205. Martis explains that system 10 "includes a remote control unit (RCU) 12" that "control[s] an electronic device such as an audio/visual (A/V) receiver 14, a set-top computer system 16 and a television receiver 18." EX1007, ¶14. The

RCU 12 is automatically programed using system 16 to operate a "variety of other electronic devices" including, "a TV, a VCR, a DVD player, a CD player or a stereo system." *Id*., ¶¶14, 22.

206. Martis further describes programming RCU 12 to control these devices using system 16. System 16 "may prompt the user to input information about the devices which the user wishes to have the RCU [12] control." *Id*., ¶15. System 16 uses the "setup software 26, which may be resident on the system 16" to configure RCU 12 using a "configuration menu." *Id*., ¶19, 22. Martis further explains that the configuration menu "may allow the user to input the type of devices which the user wishes to automatically control using the RCU 12." *Id*., ¶¶22, 25. As an example, Figures 3A-3C from Martis depict graphical user interfaces displaying different configuration menu screens.

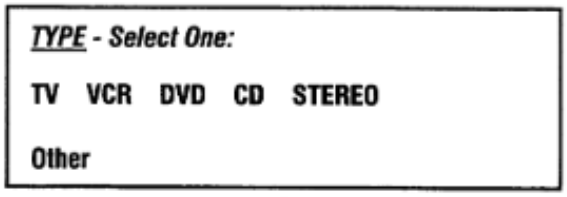


FIG. 3A

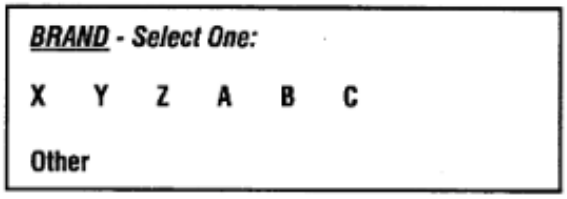


FIG. 3B

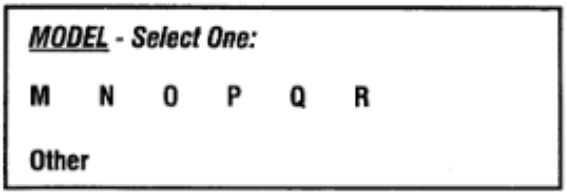


FIG. 3C

EX1007, FIGs. 3A-3C.

207. Martis explains that Figure 3A is "a graphical user interface, displayed on the television receiver 18, [that] may ask the user to input the type of device, be it a TV, a VCR, a DVD player, a CD player or a stereo system." EX1007, ¶22. After the step illustrated in Figure 3A, system 16 displays the graphical user interface illustrated in Figure 3B. Figure 3B is "a list of common manufacturers of the type of device selected." *Id*., ¶23. This process continues as illustrated in Figure 3C. Figure 3C prompts "the user to select from among the models available for the given type of device and the selected manufacturer." *Id*.,

¶24. The user "input[s] the selections [for Figures 3A-3C] using the RCU 12" through a "mouse style pointing system" or "each potential selection may be associated with a number or a letter which then may be entered using the keypad provided on the RCU 12." *Id.*, ¶25.

208. After determining the user selections, system 16 identifies matching "remote control codes" from a database. *Id*., ¶27. In particular, system 16 compares the selection to "a database of known information." *Id*., ¶26. If the user's selections match an existing database entry, system 16 sends the corresponding signal information and protocols to RCU 12 to configure RCU 12 to control the selected device. *Id*., ¶¶27, 40. For example, Martis states:

> From the database, the required remote control codes can be determined by the system. If each of the selections matches an existing database entry, the appropriate signal information is sent to the RCU 12 by the system 16. In other words, ***the RCU 12 may be provided with protocols to control a given device***. Referring to FIG. 1, the information may be provided along the path 24 from the device 16 to the device 12, thereby ***enabling the device 12 to control the device 14 as indicated at 22. The RCU 12 may also be commanded to store the information in an appropriate format on the RCU 12.***

EX1007, ¶27 (emphasis added).

209. Additionally, Martis also describes another example of this downloading:

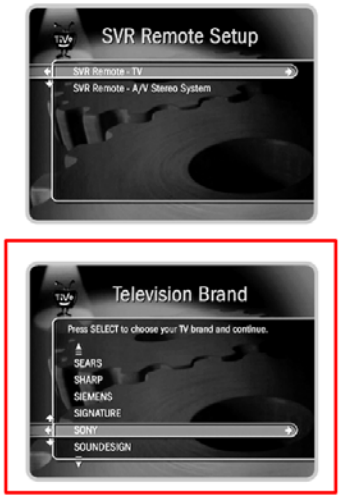
> Alternatively, the RCU may contain sufficient memory that ***the master may send the RCU both the protocols and the necessary codes to control the devices. The RCU saves this information in its local memory***. Then, when the user wishes to change the channel on the TV, the user pushes the TV button and this causes the RCU to enter a mode which controls the TV using the pre-sent protocols. Then, when the user pushes the channel up or other control button, the remote control fetches the necessary codes from local memory and ***sends a unidirectional infrared message using the protocol that is also stored locally on the RCU***.

EX1007, ¶31 (emphasis added).

B. Overview of SVR-3000

210. SVR-3000 is a set-up guide for the Sony Digital Network Recorder SVR-3000. EX1039, 0001. SVR-3000 also discloses configuring a universal remote control. As I have reproduced below, SVR-3000 discloses several screens instructing a user to select a device and brand for programming a remote control. In addition, SVR-3000 discloses steps to configure the remote by entering a remote control code. *Id.*, 0041-0042. For example, the steps includes "[i]dentify your TV" prompts the

user to choose a TV brand using buttons of the remote control. *Id.* A list of TV brands is shown on screen of the TV so that the user can navigate through the list using buttons of the remote control. *Id.*



Programming Your Remote Control

You can set your Remote Control to control your TV's power, muting, and volume by using the "Remote Control Setup" option on the **Messages & Setup** screen. Or you can set your Remote Control to control the volume on your stereo if you have it connected to your TV.

Once you've followed these steps to tell your Remote Control how to control your TV, you'll be able to put away your TV's remote and use the Remote Control from now on. You'll only need your VCR's remote for watching videotapes.

Follow these steps to set up your Remote Control using the on-screen code entry method. If this method doesn't work, try the Learning Mode Method (page 43) or Code Search Method (page 44) methods.

1 Start at TiVo Central.

Press the TiVo button to go to TiVo Central.

2 Navigate to SVR Remote - TV.

Choose "Messages & Setup", then "SVR Remote Setup", then "SVR Remote - TV".

3 Identify your TV.

Use the CH (Channel) +/– buttons to scroll down the list of TV brands page by page, choose your TV brand from the list, and press SELECT. If you have been using a TV remote control other than the one that came with your TV, select your TV brand, not the brand of the remote.

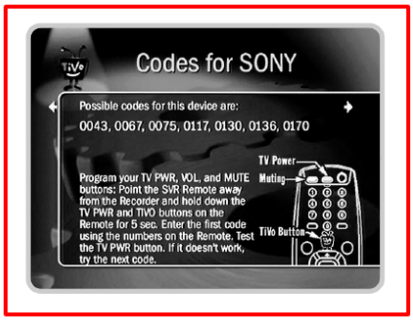
Setting Up Your System

EX1039, 0041 (annotated).

EX1039, 0041.

211. When the user selects the TV brand, the user "will see a screen with one or more four-digit codes for [the user's] TV." EX1039, 0042. The user may "[u]se the number keys on [the] remote control to enter the four-digit code." *Id.* The

user can "[t]est the code by pointing [the] remote control in the direction of the TV and pressing the TV POWER button." *Id.* If this turns the TV off, the correct code has been found. *Id.*



Note

If you have your stereo hooked up to your TV, you can program the Remote Control's VOL (volume) and MUTING buttons to send signals to your stereo rather than to your TV. Go to "Messages & Setup", then "SVR Remote Setup", then "SVR Remote - TV". Press the TiVo and VOL buttons to illuminate the LED before you enter the code.

4 Enter the Remote Control code.

When you select your TV brand, you will see a screen with one or more four-digit codes for your TV.

a) Cover the end of the Remote Control with your hand to shield the IR Emitter.

b) On the Remote Control, press and hold the TiVo and TV POWER buttons simultaneously for about three seconds, until the remote's LED illuminates. Release the buttons and the LED will remain illuminated.

c) Use the number keys on your Remote Control to enter the four-digit code you want to test (start with the first code in the list on the screen).

d) After pressing the fourth digit of the code, the LED will flash three times, indicating that you entered a valid code.

e) Test the code by pointing your Remote Control in the direction of the TV and pressing the TV POWER button. If this turns the TV off, you have found the correct code. Now you can use the Remote Control to turn your TV on and off, control volume, and mute the sound.

f) If the Remote Control could not turn your TV off, try the next code listed for your TV.

EX1039, 0042 (annotated).

EX1039, 0042.

212. SVR-3000 also describes additional instructions for testing a remote control using a "Code Search Method." EX1039, 0044. I have reproduced these instructions below:

Note

- **In this method, when you find the correct code, it will automatically program the TV POWER, VOL +/–, and MUTING buttons on the Remote Control.**
- **If you have a stereo system connected to the SVR Recorder, you can program the POWER button on the Remote Control to turn on and off both the stereo and your TV. To do so, use code 1999 instead of 0999 in step 1.**
- **To reset the Remote Control back to the manufacturer's settings, press and hold the TiVo and TV POWER buttons together for three seconds until the LED on the Remote Control remains lit. Enter code 0981 (or 1981) using the number keys on the Remote Control.**

Code Search Method

Another method of programming the Remote Control to operate your TV and/or stereo system is the code search method. The Remote Control has hundreds of available codes. The correct code for your TV might be available, yet not listed on the screen for your TV brand.

1 Put the Remote Control in code search mode.

a) Press the TiVo button and TV POWER simultaneously for three seconds until the LED on the Remote Control remains lit continuously.

b) Release the buttons and the LED remains illuminated.

c) Using the number keys on the Remote Control, enter the code 0999.

2 Test the code.

a) Point the Remote Control at the TV, press TV POWER and see if the TV turns off or on.

b) If the TV does turn off or on, confirm that MUTE and VOL (volume) +/– also operate the TV. If they do, go to step 4 below. If they do not, continue with step 3.

3 Try another code.

Continue to cycle through each code by pressing CH+, then test the code by repeating step 2 above. Remember, there are hundreds of codes. If the LED goes out. you have reached the end of the codes.

4 Program the Remote Control with the correct code.

a) When the code allows the Remote Control to operate the TV power, volume and muting, press ENTER to set the code and exit Code Search mode.

b) You can also press CLEAR to exit Code Search mode without setting a new code.

EX1039, 0044.

213. This method instructs a user to "press TV POWER and see if the TV turns off or on." EX1039, 0044. If so, the instructions tell a user to "press ENTER to set the code and exit Code Search mode." *Id.* If not, the instructions tell a user to press "CH+" and then re-test a new code by pressing TV POWER again. *Id.* In this manner, SVR-3000 depicts instructions for interactively testing multiple codes. A POSA would have further found it obvious to display these instructions to a user based on the other instructions displayed and discussed in SVR-3000. Displaying

these instructions on a screen would improve the user experience and allow the user to more easily test the remote control without needing to identify a physical manual.

C. A POSA would have been motivated to combine Martis, SVR-3000, and Hayes

214. A POSA would have been motivated to combine SVR-3000 with Martis to provide a process for verifying that a remote control was properly configured to control a desired appliance. A POSA would have been motivated to combine Hayes with Martis and SVR-3000 to further streamline this testing process with intuitive graphical user interfaces for instructing users to test multiple code sets. As I previously explained and as Dr. Rosenberg has acknowledged, testing was a well-known and common process that would be particularly desirable to confirm proper remote control operation and to enhance reliability. EX1035, 102:14-16, 103:5-10, 103:14-17; *See* Sections II.F, V.D.

215. A POSA would have been motivated to incorporate SVR-3000's displayed remote control setup numbers and testing instructions and would have also found it obvious to display SVR-3000's Code Search Method instructions as well. EX1039, 0044. SVR-3000 already displays instructions for testing, and a POSA would have found it obvious to display the additional testing instructions recited in SVR-3000 as well. As I previously explained, displaying the testing instructions in this manner would improve user experience and would allow the user to more easily

test the remote control without needing to identify a physical manual. This would be useful in the situation where the user has lost the physical manual.

216. Additionally, a POSA would have been motivated to also implement Hayes's organization of testing instructions into different graphical user interfaces to provide a user-friendly guide to aid a user with the remote control setup process. For example, by generating different graphical user interface displays with discrete steps for the remote control setup process, the process may avoid overwhelming users with too much information at once. This may aid in simplifying the remote control setup process, which Hayes describes as typically "being demanding, exacting and generally frustrating for many users." EX1041, ¶3. Hayes breaks down the programming steps of identifying a type of device or brand, loading a code set for testing, testing a command for that codeset, indicating whether a response from the target device was detected, and testing additional codesets into discrete elements to alleviate user frustration. *Id.* A POSA would have been motivated to implement such benefits with Martis and SVR-3000 to further streamline the remote control setup and testing process already outlined in the Martis-SVR-3000 combination. Implementing Hayes would have provided user-friendly graphical user interfaces that would aid users in testing multiple code sets for a particular type of device or brand.

217. In combining Martis, SVR-3000, Hayes, a POSA would have

implemented the displayed remote control setup numbers and testing and verification instructions described in SVR-3000 and Hayes with Martis. This would provide Martis's set-top box with the ability to aid a user with programming a remote control when the remote control already stores codesets that may be loaded. Martis may display remote control setup numbers as described in SVR-3000 for the user to enter into the remote control in a manner similar to SVR-3000. This would provide Martis with the flexibility to both download codesets to the remote control and to additionally facilitate the programming of remote controls with pre-stored or pre-loaded code sets.

218. Additionally, implementing the testing and verification instructions described in SVR-3000 and Hayes would allow Martis's set-top box ("set-top computer system 16") to ensure that the remote was properly configured. Martis even acknowledges that a selection of a type or brand of device may be insufficient to identify the exact code (e.g., when selections do not match existing database entries). EX1007, ¶¶28-29. Martis therefore provides a motivation that would direct a POSA to provide an improvement to confirm that the remote control is utilizing the correct remote control codes.

219. In this manner, the combined Martis-SVR-3000-Hayes configuration process would therefore instruct a user to program a remote control based on a selected type or brand of device, confirm that the programming was successful via

SVR-3000's and Hayes's functionality testing process, and also cycle through and display remote control setup numbers to test multiple code sets. Accordingly, a POSA would have been motivated to combine Martis, SVR-3000, and Hayes.

220. A POSA would have also known how to combine Martis, SVR-3000, and Hayes as I described above and would have had a reasonable expectation of success. Martis, SVR-3000, and Hayes are all directed to conventional consumer electronic appliances such as set top boxes, televisions, VCRs, and personal computers and using such devices to program a remote control. EX1007, Abstract, ¶¶14, 22; EX1039, 0001, 0041-0042; EX1041, Title, ¶¶2, 97, 105.

221. Combining Martis, SVR-3000, and Hayes would have been predictable and would simply amount to updating Martis's software to additionally include the display of remote control setup numbers and testing instructions as described in Martis and Hayes. EX1039, 0001, 0041-0042; EX1041, ¶¶101-03, FIGs. 25, 28. For example, as described in Hayes, its graphical user interfaces may be implemented on devices such as "personal computers, home devices, or the like." EX1041, ¶105. This would include, for example, Martis's "set-top computer system 16." EX1007, ¶14.

222. This combination would operate to perform its intended purposes. Combining Martis, SVR-3000, and Hayes would amount to nothing more than combining known prior art elements according to known methods to yield

predictable results and applying a known technique to a known device ready for improvement to yield predictable results. Thus, in view of the conventional remote control programming systems described in Martis, SVR-3000, and Hayes, a POSA would have easily combined the references and would have found it predictable to form such a combination.

D. Substitute Claim 21

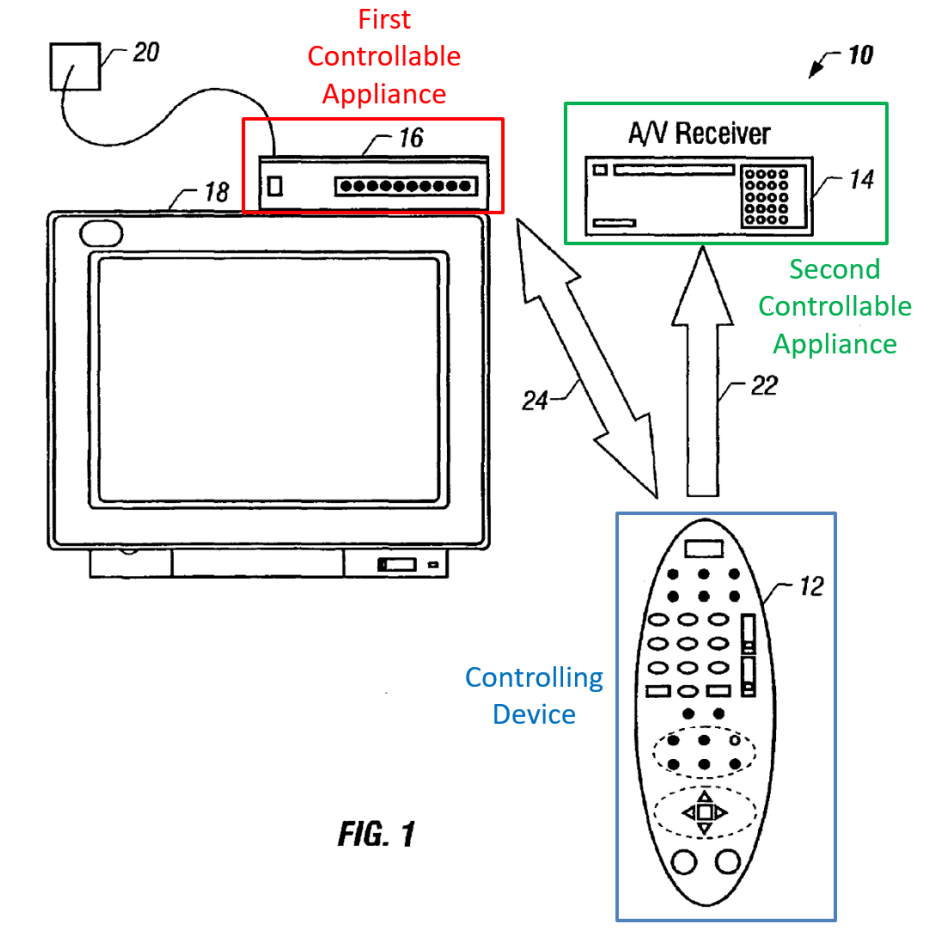
1. Claim Elements 21-pre, 21[a], and 21[b]

223. Claim elements 21-pre, 21[a], and 21[b] recite:

- **21-pre** A method for providing interactive instructions to a user to set up a controlling device used to command a plurality of controllable appliances, the method comprising:
- **21[a]** providing on a first controllable appliance programming for the display of instructions to the user in response to input from the user via the controlling device;
- **21[b]** providing input by the user to the first controllable appliance via the controlling device indicating that the controlling device is to be set up to command a second controllable appliance;

224. Martis and SVR-3000 disclose claim elements 21-pre, 21[a], and 21[b]. Martis describes a system that provides the "necessary conversion information" to "enable a remote control device to control a number of different

consumer electronic devices." EX1007, Abstract. Similarly, Martis describes "[a] system 10 for commonly controlling electronic devices." *Id.*, ¶14.



EX1007, FIG. 1 (annotated).

225. Martis explains that system 10 "includes a remote control unit (RCU) 12" that "control[s] an electronic device such as an audio/visual (A/V) receiver 14, a set-top computer system 16 and a television receiver 18." EX1007, ¶14. The RCU 12 is automatically programed using system 16 to operate a "variety of other electronic devices" including, "a TV, a VCR, a DVD player, a CD player or a

stereo system." *Id*., ¶¶14, 22. Martis' set-top box ("set-top computer system 16") discloses the claimed "first controllable appliance" while RCU 12 discloses the "controlling device. *Id.*, FIG. 1, ¶¶14-15, 19, 22-27.

226. Martis further describes programming RCU 12 to control these devices using system 16. System 16 "may prompt the user to input information about the devices which the user wishes to have the RCU [12] control." *Id*., ¶15. System 16 uses the "setup software 26, which may be resident on the system 16" to configure RCU 12 using a "configuration menu." *Id*., ¶¶19, 22. Martis further explains that the configuration menu "may allow the user to input the type of devices which the user wishes to automatically control using the RCU 12." *Id*., ¶¶22, 25. As an example, Figures 3A-3C from Martis depict graphical user interfaces displaying different configuration menu screens.

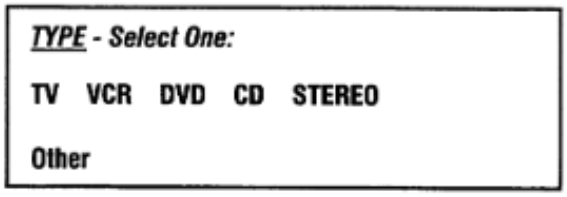


FIG. 3A

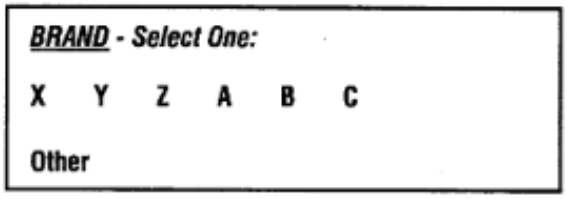


FIG. 3B

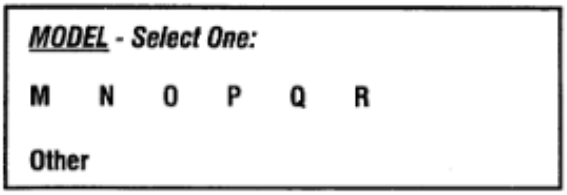


FIG. 3C

EX1007, FIGs. 3A-3C.

227. Martis explains that Figure 3A is "a graphical user interface, displayed on the television receiver 18, [that] may ask the user to input the type of device, be it a TV, a VCR, a DVD player, a CD player or a stereo system." EX1007, ¶22. This device discloses the claimed "second controllable appliance." After the step illustrated in Figure 3A, system 16 displays the graphical user interface illustrated in Figure 3B. Figure 3B is "a list of common manufacturers of the type of device selected." *Id*., ¶23. This process continues as illustrated in Figure 3C. Figure 3C prompts "the user to select from among the models available for the

given type of device and the selected manufacturer." *Id*., ¶24. The user "input[s] the selections [for Figures 3A-3C] using the RCU 12" through a "mouse style pointing system" or "each potential selection may be associated with a number or a letter which then may be entered using the keypad provided on the RCU 12." *Id.*, ¶25.

228. SVR-3000 also depicts the same presentation screens instructing a user to select a type of device and a brand. EX1039, 0041.

EX1039, 0041.

2. Claim Elements [21c] and [21d]

229. Claim element 21[c] has been amended to generally recite "data" and claim element 21[d] has been added to indicate that the data identifies a first codeset

associated with a type and brand of the second controllable appliance. Revised MTA, Appendix A. I have reproduced these claim elements below.

- **[21c]** accessing ~~instruction~~ data associated with the second controllable appliance by the programming provided on the first controllable appliance; ~~and~~
- **[21d]** <u>wherein the data associated with the second controllable appliance identifies a first codeset associated with the type or brand of the second controllable appliance; and</u>

230. Martis, SVR-3000, and Hayes disclose claim elements 21[c] and 21[d]. For example, in Martis, system 16 identifies matching "remote control codes" from a database. EX1007, ¶27. After determining the user selections, system 16 identifies matching "remote control codes" from a database. *Id*. In particular, system 16 compares the selection to "a database of known information." *Id*., ¶26. While Martis describes transmitting remote control codes to a remote control, a POSA would have found it obvious for such a configuration to be used to display remote control setup numbers as well. *See* Sections II.E, VI.C. For example, a POSA would have found it obvious to identify one or more remote control setup numbers corresponding to a selected type and brand of the second controllable appliance. SVR-3000 depicts this same retrieval and display of an identifier for a codeset corresponding to the user's selected type and brand of device. EX1039, 0041, 0042.


SVR Remote Setup
SVR Remote - TV
SVR Remote - A/V Stereo System


Television Brand
Press SELECT to choose your TV brand and continue.
SEARS
SHARP
SIEMENS
SIGNATURE
SONY
SOUNDESIGN

EX1039, 0041.

EX1039, 0042.

231. When the user selects the TV brand, the user "will see a screen with one or more four-digit codes for [the user's] TV." EX1039, 0042. The user may "[u]se the number keys on [the] remote control to enter the four-digit code." *Id.* Displaying a four-digit code corresponding to the first codeset discloses the accessing of data associated with the second controllable appliance recited in claim elements [21c] and [21d].

232. I understand that Dr. Rosenberg confirmed that the "data" of claim elements 21[c] and 21[d] refers to the remote control setup number that is displayed. EX1043, 25:11-20. For the reasons that I have explained, SVR-3000 describes

accessing and displaying this same remote control setup number to identify a codeset corresponding to a type or brand of the selected second controllable appliance.

3. Claim Elements [21e] and [21f]

233. Claim elements [21e] and [21f] recite:

- **[21e]** in response to input by the user via the controlling device, accessing ~~displaying the~~ instruction data using ~~by~~ the programming provided on the first controllable appliance to display the instruction data for use by the user in setting up the controlling device to command the second controllable appliance using the first codeset;
- **[21f]** wherein the displayed instruction data comprises interactive instructions for the user to test at least one controllable function of the second controllable appliance by transmitting a command from the controlling device using a codeset under test and to indicate whether the test was successful in controlling at least one controllable function of the second controllable appliance by transmitting a command from the controlling device to the first controllable appliance using a third codeset corresponding with the first controllable appliance; and

234. The combination of Martis, SVR-3000, and Hayes discloses these claim elements. As I previously explained, Martis already displays instructions instructing the user to select a type, brand, and model of the device they wish to

control. EX1007, ¶¶22-27, FIGs. 3A-3C. SVR-3000 includes similar display screens but additionally instructs the user to test the remote control to ensure proper functionality. One example is provided below:

EX1039, 0042.

235. As seen from this screen, SVR-3000 instructs the user to press a "TV POWER" button to test that the remote has been properly configured. EX1039, 0042. SVR-3000, however, provides additional instructions for testing based on a "Code Search Method":

Note

- **In this method, when you find the correct code, it will automatically program the TV POWER, VOL +/–, and MUTING buttons on the Remote Control.**
- **If you have a stereo system connected to the SVR Recorder, you can program the POWER button on the Remote Control to turn on and off both the stereo and your TV. To do so, use code 1999 instead of 0999 in step 1.**
- **To reset the Remote Control back to the manufacturer's settings, press and hold the TiVo and TV POWER buttons together for three seconds until the LED on the Remote Control remains lit. Enter code 0981 (or 1981) using the number keys on the Remote Control.**

Code Search Method

Another method of programming the Remote Control to operate your TV and/or stereo system is the code search method. The Remote Control has hundreds of available codes. The correct code for your TV might be available, yet not listed on the screen for your TV brand.

1 Put the Remote Control in code search mode.

a) Press the TiVo button and TV POWER simultaneously for three seconds until the LED on the Remote Control remains lit continuously.

b) Release the buttons and the LED remains illuminated.

c) Using the number keys on the Remote Control, enter the code 0999.

2 Test the code.

a) Point the Remote Control at the TV, press TV POWER and see if the TV turns off or on.

b) If the TV does turn off or on, confirm that MUTE and VOL (volume) +/– also operate the TV. If they do, go to step 4 below. If they do not, continue with step 3.

3 Try another code.

Continue to cycle through each code by pressing CH+, then test the code by repeating step 2 above. Remember, there are hundreds of codes. If the LED goes out. you have reached the end of the codes.

4 Program the Remote Control with the correct code.

a) When the code allows the Remote Control to operate the TV power, volume and muting, press ENTER to set the code and exit Code Search mode.

b) You can also press CLEAR to exit Code Search mode without setting a new code.

EX1039, 0044.

236. As seen from this page, SVR-3000 describes instructing a user to also try the "MUTE and VOL (volume) +/–" to confirm functionality. EX1039, 0044. If the device responds, SVR-3000 instructs the user to "press ENTER to set the code and exit." *Id.* If not, SVR-3000 instructs the user to press "CH+" to try another code and perform another test. *Id.* Thus, SVR-3000 discloses the same instructions for testing and indicating a successful test as recited in the claims.

237. Hayes also discloses "interactive instructions for the user to test at least

one controllable function of the second controllable appliance by transmitting a command from the controlling device using a codeset under test and to indicate whether the test was successful in controlling at least one controllable function of the second controllable appliance." For example, as seen in Figure 25, Hayes depicts a designation of the device code being tested as well as command functions for the user to use for testing (e.g., power, mute, or digit). EX1041, ¶101. Figure 25 depicts, an "indication of which function code set is being used in the testing procedure… via text 214." *Id.*

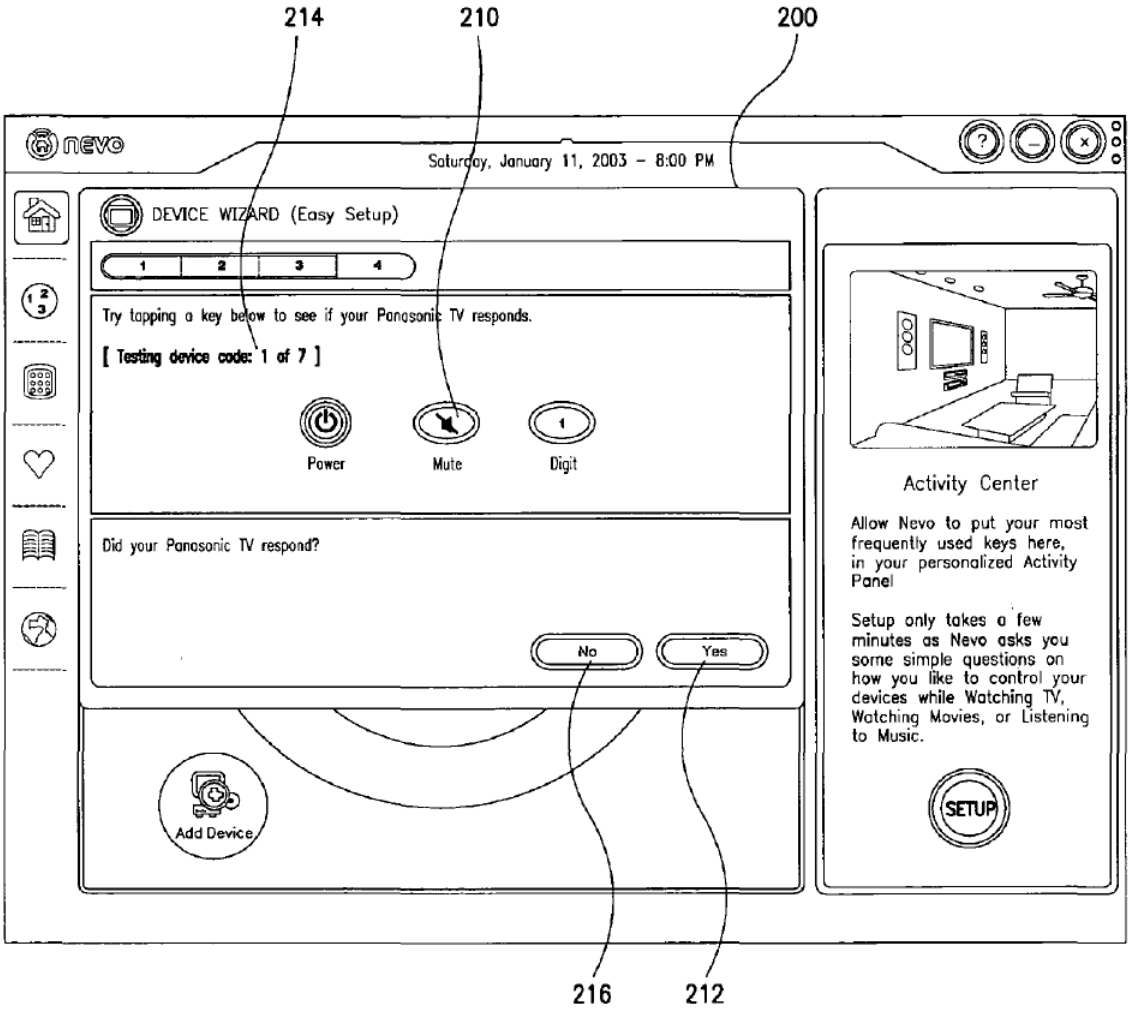


FIG. 25

EX1041, FIG. 25; EX1042, FIG. 25.

If the user transmits a command and the intended target device does respond as expected, ***the user may indicate the successful interaction between the remote control 10' and the target device, for example, by activating the "yes" icon 212***. An indication of a successful interaction between the setup wizard/remote control 10′ and the intended target device may then be used to lock the

> function codes for the function code set presently being utilized in the testing procedure to a device mode in the remote control 10′ which function codes are to be used to command the operation of the intended target device when the remote control 10′ is placed into that device mode.

EX1041, ¶101 (emphasis added).

238. In this manner, Hayes also describes "interactive instructions for the user to test at least one controllable function of the second controllable appliance by transmitting a command from the controlling device using a codeset under test and to indicate whether the test was successful in controlling at least one controllable function of the second controllable appliance" as recited in claim element 21[f].

239. As I previously explained, a POSA would have been motivated to incorporate the remote control setup numbers described in SVR-3000 and Hayes with Martis to provide flexibility to allow Martis to also aid users with programming remote controls with pre-stored or pre-loaded codes. *See* Section VI.C. A POSA would have also found it obvious to display Hayes's instructions together with the SVR-3000's instructions on a screen based on the SVR-3000's display of other testing instructions on-screen. EX1039, 0042. Displaying these instructions as well would have been a simple process to include additional programming to display this text. This would provide the benefit of providing SVR-3000's Code Search Method instructions even if a user misplaces or loses their user manual. Therefore, a POSA

would have found it obvious to display these instructions as well. Further, a POSA would have been motivated to combine SVR-3000's and Hayes's additional display of testing instructions with Martis to ensure proper and more reliable programming of Martis' RCU 12. *See* Section VI.C. This would further Martis' goal of identifying the correct codeset when there is ambiguity or when no exact codeset matches user selections. EX1007, ¶28. SVR-3000's testing instructions would provide Martis's system with a process to confirm that the correct code set or control codes were downloaded to the RCU 12.

240. The combination of Martis, SVR-3000, and Hayes also discloses transmitting an indication of success to the first controllable appliance "using a third codeset corresponding with the first controllable appliance." For example, Martis describes the remote control communicating with the first controllable appliance such as the set-top box. EX1007, ¶¶25, 30-31. Martis explains that the remote control transmits communications to system 16 using commands "entered using the keypad provided on the RCU 12." *Id.*, ¶25. "For example, the RCU may contain a button that is labeled 'TV.' When the TV button is pushed, the appropriate commands are sent to the master informing the master that the user now wishes to control the TV. The next button that is pushed, for example, the channel up button, causes the appropriate command to be sent to the master telling it, for example, that the user wishes to go to the next highest channel." *Id.*, ¶30. In this manner, Martis describes

commands codes transmitted specifically to the set-top box. The commands collectively disclose a codeset—such as the claimed "third codeset"—which is used to communicate commands from the remote control device to a first controllable appliance. The first controllable appliance is the appliance aiding the user in configuring the remote control device.

241. The combination of Martis, SVR-3000, and Hayes would similarly use such a codeset to communicate whether testing was successful. A POSA would have understood that the indication of successful testing as described in SVR-3000 and Hayes would have similarly utilized Martis's command codes to signal successful testing to the first controllable appliance. EX1039, 0042; EX1041, ¶101.

242. To the extent claim element 21[f] is interpreted to refer to a "command' instead of a "third codeset," Martis, SVR-3000, and Hayes disclose this as well. I note that the term "command" is broader than a "third codeset." Therefore, the same disclosures from Martis, SVR-3000, and Hayes as I discussed above also disclose transmitting a general "command" corresponding to the first controllable appliance. For example, Martis's RCU transmissions used with SVR-3000's and Hayes's indications of success would be such a command. Martis, SVR-3000, and Hayes therefore additionally disclose "transmitting a command from the controlling device to the first controllable appliance using a command corresponding to the first controllable appliance" as discussed by Dr. Rosenberg.

243. Thus, the combination of Martis, SVR-3000, and Hayes discloses claim elements 21[e] and 21[f]. A POSA would have been motivated to combine Martis, SVR-3000, and Hayes and would have known how to combine Martis, SVR-3000, and Hayes for the reasons that I explained in Section VI.D.

4. Claim Element 21[g]

244. Claim element [21g] recites:

- **[21g]** receiving, from the controlling device, an indication that a first test was unsuccessful in controlling at least one controllable function of the second controllable appliance using the first codeset;

245. The combination of Martis, SVR-3000, and Hayes discloses this claim element. The testing processes described in SVR-3000 and Hayes describe the scenario where the first test corresponding to the first codeset was unsuccessful in controlling a function of the second controllable appliance.

246. For example, SVR-3000 depicts instructions for testing a remote control code and then trying another code when a first code is unsuccessful. EX1039, 0042, 0044.


Codes for SONY
Possible codes for this device are:
0043, 0067, 0075, 0117, 0130, 0136, 0170
Program your TV PWR, VOL, and MUTE buttons: Point the SVR Remote away from the Recorder and hold down the TV PWR and TIVO buttons on the Remote for 5 sec. Enter the first code using the numbers on the Remote. Test the TV PWR button. If it doesn't work, try the next code.
TV Power
Muting
TiVo Button

EX1039, 0042.

Note

- **In this method, when you find the correct code, it will automatically program the TV POWER, VOL +/–, and MUTING buttons on the Remote Control.**
- **If you have a stereo system connected to the SVR Recorder, you can program the POWER button on the Remote Control to turn on and off both the stereo and your TV. To do so, use code 1999 instead of 0999 in step 1.**
- **To reset the Remote Control back to the manufacturer's settings, press and hold the TiVo and TV POWER buttons together for three seconds until the LED on the Remote Control remains lit. Enter code 0981 (or 1981) using the number keys on the Remote Control.**

Code Search Method

Another method of programming the Remote Control to operate your TV and/or stereo system is the code search method. The Remote Control has hundreds of available codes. The correct code for your TV might be available, yet not listed on the screen for your TV brand.

1 Put the Remote Control in code search mode.

a) Press the TiVo button and TV POWER simultaneously for three seconds until the LED on the Remote Control remains lit continuously.

b) Release the buttons and the LED remains illuminated.

c) Using the number keys on the Remote Control, enter the code 0999.

2 Test the code.

a) Point the Remote Control at the TV, press TV POWER and see if the TV turns off or on.

b) If the TV does turn off or on, confirm that MUTE and VOL (volume) +/– also operate the TV. If they do, go to step 4 below. If they do not, continue with step 3.

3 Try another code.

Continue to cycle through each code by pressing CH+, then test the code by repeating step 2 above. Remember, there are hundreds of codes. If the LED goes out. you have reached the end of the codes.

4 Program the Remote Control with the correct code.

a) When the code allows the Remote Control to operate the TV power, volume and muting, press ENTER to set the code and exit Code Search mode.

b) You can also press CLEAR to exit Code Search mode without setting a new code.

EX1039, 0044.

247. SVR-3000's testing process focuses on instructing users to try multiple possible codes when a particular codeset is unsuccessful at controlling the target device. Hayes adds to this functionality and describes the communication of failure after attempting each codeset. EX1041, ¶102, FIG. 25, FIG. 28. For example:

> In the case where the intended target device does not respond to a transmitted command as expected, the user can elect to ***try one or more function codes from a further function code set, for example, by activating the "no"***

> ***icon 216***, to see if the intended target device responds to any further transmitted function codes.

EX1041, ¶102 (emphasis added).

248. Hayes then cycles through additional "available function code sets for the specified device and brand." *Id.*, ¶102. The user then continues testing until a response is detected. *Id.*, ¶¶102-03. An example of cycling through different remote control setup codes as well as testing functions of different code sets is depicted in Figure 28.

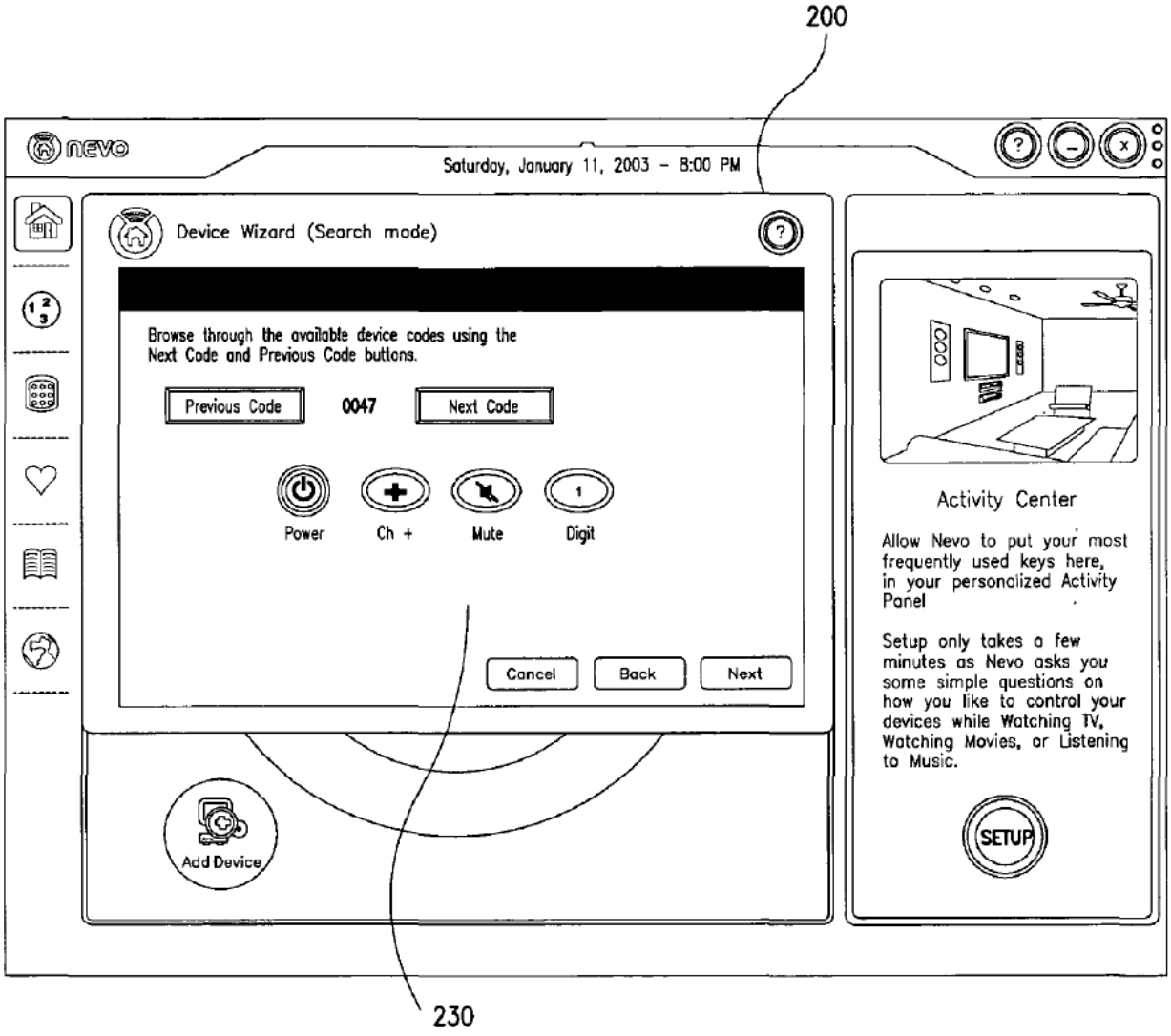


FIG. 28

EX1041, FIG. 28; EX1042, FIG. 28.

249. In this manner, the user indicates that the first test corresponding to a first codeset was unsuccessful. In this combination of Martis, SVR-3000, and Hayes, a POSA would have used SVR-3000's and Hayes's testing protocol with Martis's communication signals to provide an indication that a test was unsuccessful to

inform a first controllable appliance. This would occur after each codeset is tested as described in Hayes. In the combination, in response to receiving the indication of failure, another remote control setup code would be displayed as depicted in Figure 28 of Hayes. EX1016, 18:35-57. As I previously explained a POSA would have also found it obvious to display the remote control setup numbers described in SVR-3000 using multiple screens as well rather than on a single screen similar to Hayes. *See* Section VI.C. A POSA would have been motivated to implement the testing process and functionality described in SVR-3000 and Hayes with Martis for the reasons I explained in Section VI.C.

5. Claim Elements 21[h.0], 21[h.1], and 21[h.2]

250. Claim elements 21[h.0], 21[h.1], and 21[h.2] recite:

- **21[h.0]** based at least in part on the indication that the first test was unsuccessful:
- **21[h.1]** (1) accessing the data associated with the second controllable appliance by the programming provided on the first controllable appliance, wherein the data associated with the second controllable appliance additionally identifies a second codeset associated with the type or the brand of the second controllable appliance; and
- **21[h.2]** (2) accessing instruction data using the programming provided on the first controllable appliance to display the instruction data for use by the user

in setting up the controlling device to command the second controllable appliance using the second codeset;

251. As I described with reference to claim element 21[g], the combination of Martis, SVR-3000, and Hayes would address the situation where the first test was unsuccessful. For example, SVR-3000 describes displaying multiple remote control setup numbers for users to try while Hayes describes receiving an indication that a test for a codeset was unsuccessful. EX1039, 0042, 0044; EX1041, ¶¶102-03, FIG. 25, FIG. 28.

252. In response to such an indication, Hayes describes accessing another device code corresponding to another "function code set." EX1041, ¶101. For example, after the user has activated the "'no' icon 216" to indicate that the test was unsuccessful, the system then cycles through additional "available function code sets for the specified device and brand." *Id.*, ¶102. Figure 25 depicts an indication of the particular number of the device code being tested while Figure 28 displays the remote control setup number that is being tested.

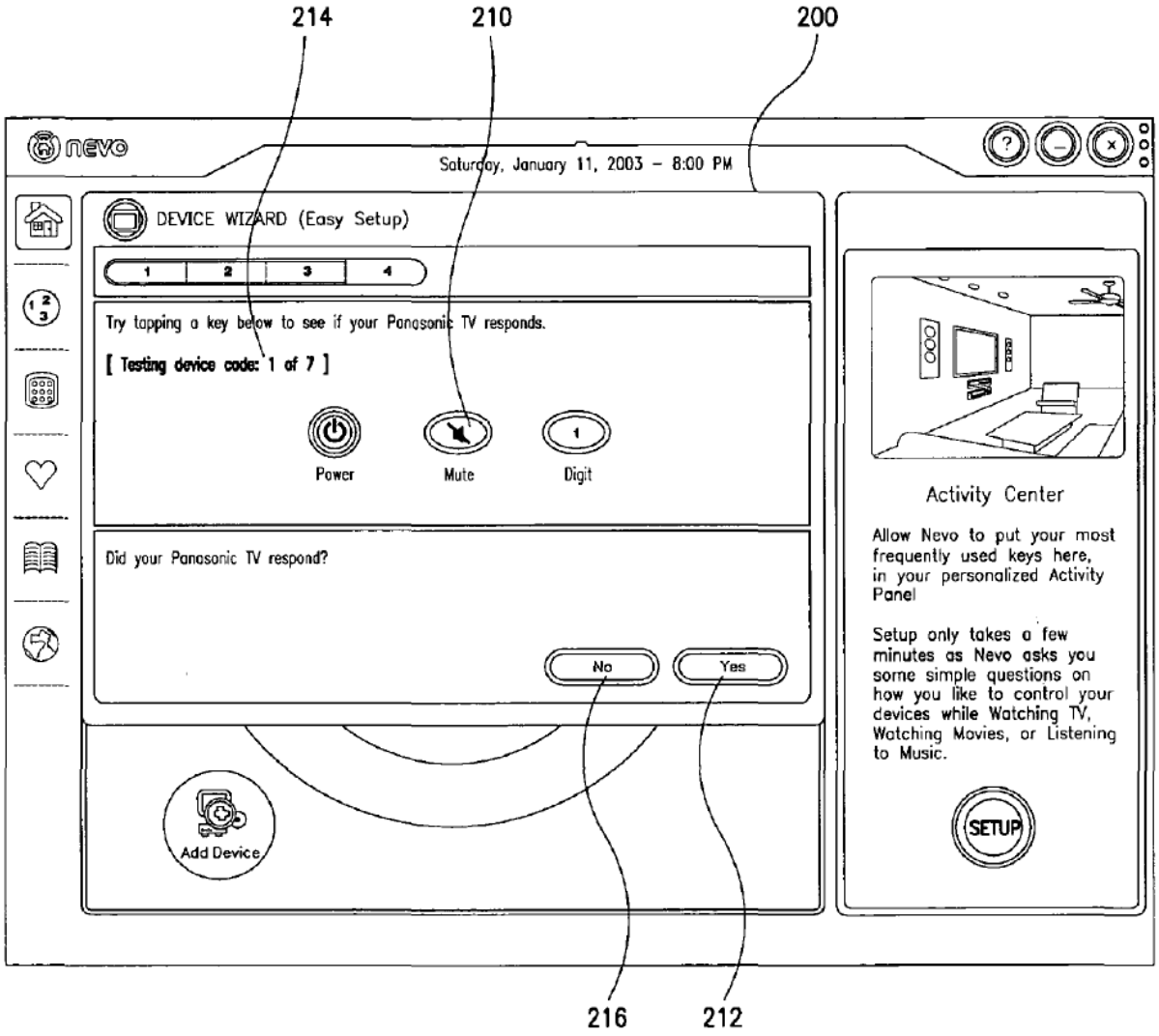


FIG. 25

EX1041, FIG. 25; EX1042, FIG. 25.

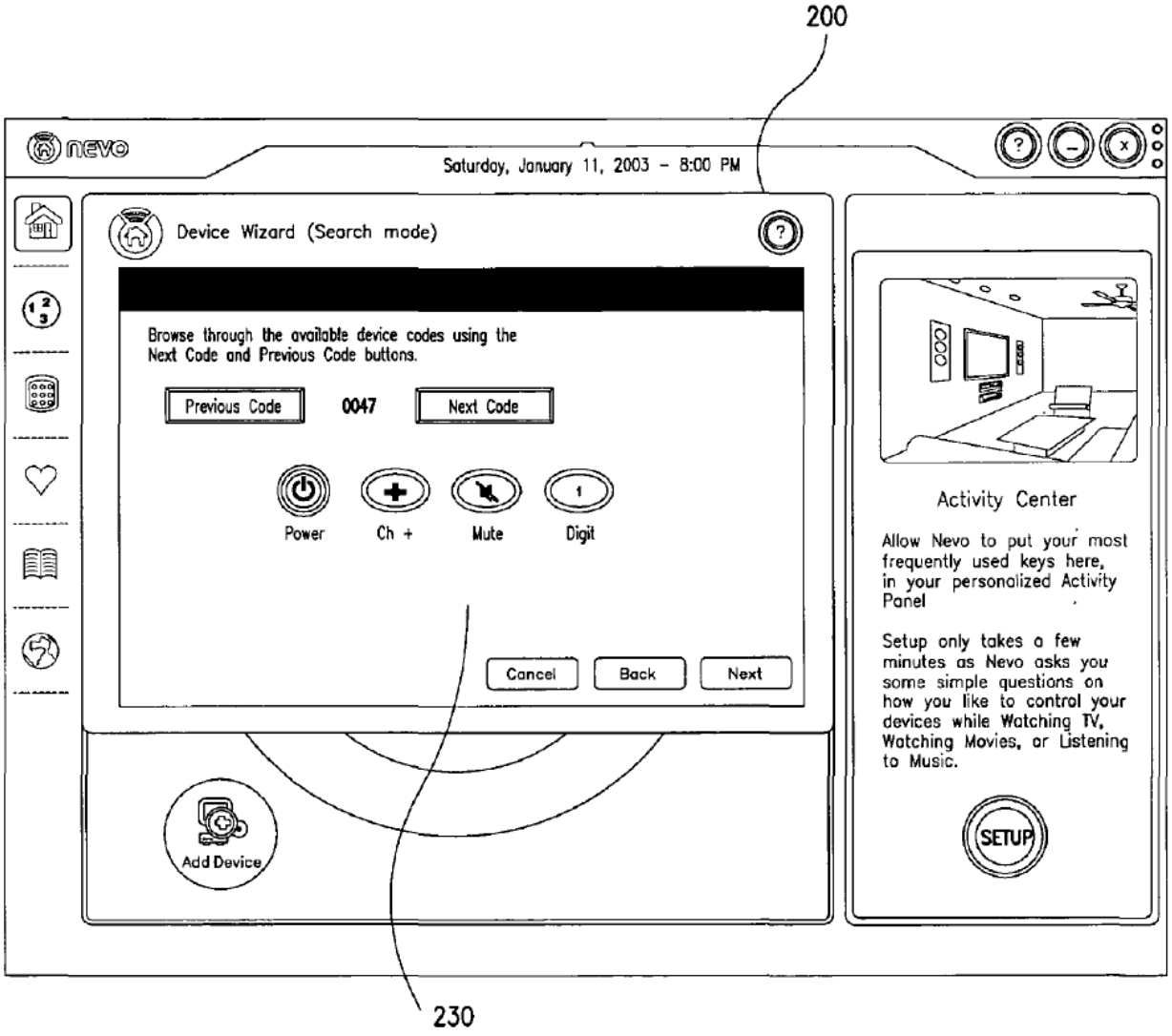


FIG. 28

EX1041, FIG. 28; EX1042, FIG. 28.

253. Focusing on Figure 28, the cycling through of different setup codes describes additionally identifying "a second codeset associated with the type or the brand of the second controllable appliance" as recited in claim element 21[h.1]. A POSA would have found it obvious and would have been motivated to implement a

similar graphical user interface and cycling of different remote control setup codes with Martis and SVR-3000 for the reasons I explained in Section VI.D. For example, SVR-3000 also describes cycling through different codesets for a particular selected brand until the user has observed successful testing. EX1039, 0042, 0044.

254. In the combination, Martis and SVR-3000 would implement a similar graphical user interface as shown in Figure 28 to cycle through multiple potential remote control setup codes. For example, SVR-3000 already describes being capable of displaying multiple remote control setup codes as well as displaying multiple screens as part of a remote control setup and testing process. EX1039, 0041-0042.

255. The combination of Martis, SVR-3000, and Hayes would be configured to display multiple remote control setup codes in a manner similar to the graphical user interface depicted in Figure 28 of Hayes. This would identify a second codeset for a particular type or brand of the second controllable appliance as described in 21[h.1]. Similarly, the combination would display this second remote control setup number to allow a user to setup the remote control to use the second codeset. The testing of this second codeset would be performed in a manner similar to SVR-3000 and Hayes as I described above with reference to claim elements 21[e] and 21[f]. *See* Section VI.D.3. In this manner, the combination would implement Hayes's cycling and display of different device codes with Martis and SVR-3000 to instruct a user to test multiple codesets for a specified type and brand of device. This would

occur in response to an indication that the first codeset was unsuccessful as described in Hayes. EX1041, ¶¶102-03, FIG. 25, FIG. 28. Thus, the combination of Martis, SVR-3000, and Hayes discloses claim elements 21[h.0], 21[h.1], and 21[h.2].

256. I understand that Patent Owner has argued that a POSA would not have been motivated to combine Martis and SVR-3000 because Martis "identifies a single code associated with the type, brand, and model of an electronic consumer device" and therefore does not "disclose a mechanism for determining a second code when the first code fails to control the intended device." Revised MTA, 24-25. This is impractical based on the knowledge of a POSA and an understanding that specified types and brands of devices commonly included multiple remote control setup numbers. *See* Section II.F.

257. As acknowledged by Dr. Rosenberg, oftentimes many potential setup codes would have existed for a potential type or brand of device. EX1043, 80:8-21. This is why a POSA would have found it obvious to test and try multiple code sets as I described in Section II.F. Therefore, Patent Owner's argument that Martis is able to identify the single correct codeset without the need for testing does not address the well-known issue in the art that multiple potential codes existed for a given type or brand. *See* Section II.F. Therefore, as I explained in Section VI.C, a POSA would have been motivated to combine Martis, SVR-3000, and Hayes to provide a robust testing process to ensure proper programming of the remote control to command the

target device or second controllable appliance.

6. Claim Element 21[i]

258. Claim element 21[i] recites:

- **21[i]** receiving, from the controlling device, an indication that a second test was successful in controlling at least one controllable function of the second controllable appliance using the second codeset; and

259. The combination of Martis, SVR-3000, and Hayes discloses receiving an indication of a successful test for the reasons that I explained with respect to claim elements 21[e] and 21[f]. *See* Section VI.D.3. For example, SVR-3000 describes instructing a user to also try the "MUTE and VOL (volume) +/–" to confirm functionality. EX1039, 0044. If the device responds, SVR-3000 instructs the user to "press ENTER to set the code and exit." *Id.* This discloses an indication that testing was successful.

260. Hayes also discloses generating an "indication that a second test was successful in controlling at least one controllable function of the second controllable appliance using the second codeset" as recited in 21[i]. For example, as seen in Figure 25, Hayes depicts a designation of the device code being tested as well as command functions for the user to use for testing (e.g., power, mute, or digit). EX1041, ¶101. Figure 25 depicts, an "indication of which function code set is being used in the testing procedure… via text 214." *Id.*

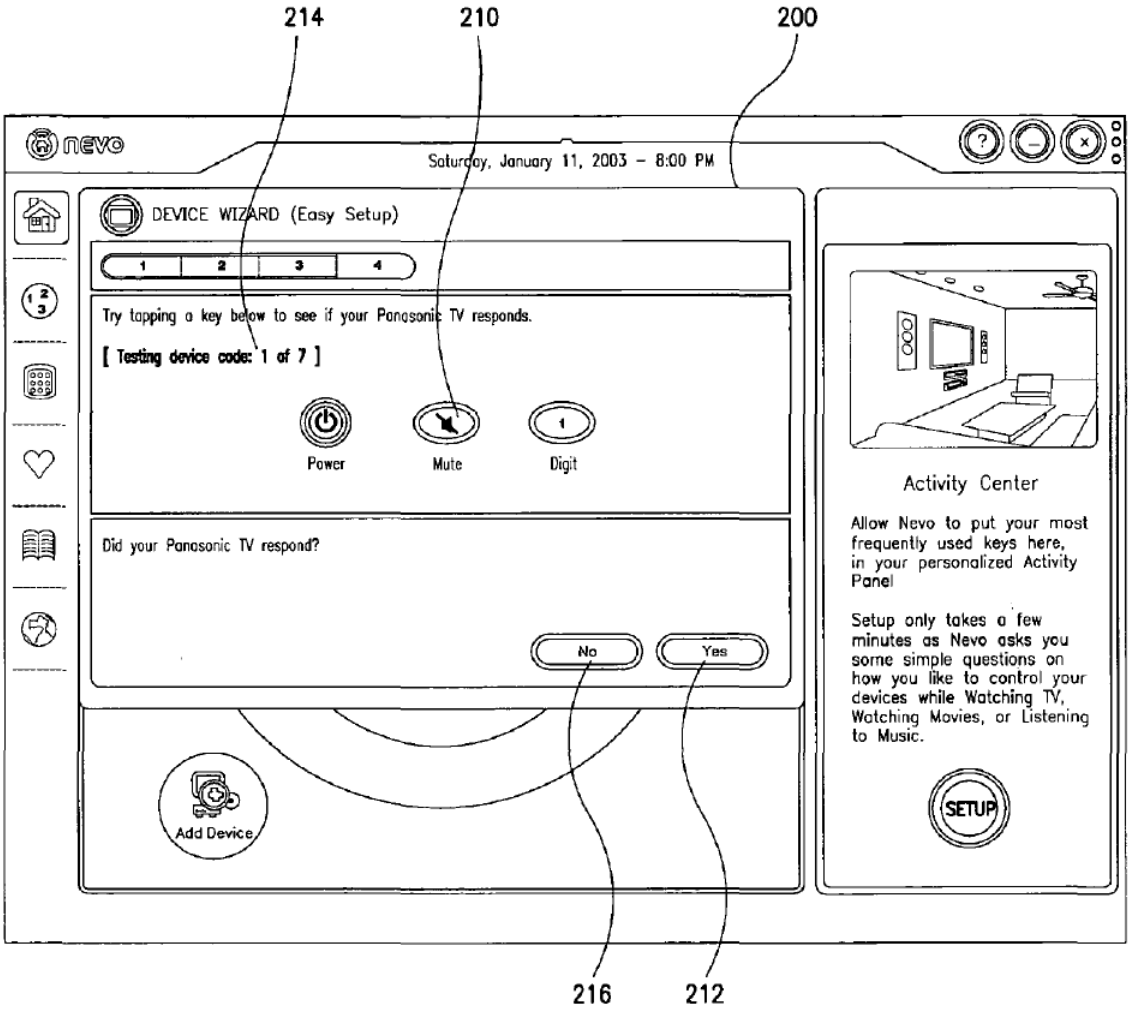


FIG. 25

EX1041, FIG. 25; EX1042, FIG. 25.

If the user transmits a command and the intended target device does respond as expected, ***the user may indicate the successful interaction between the remote control 10' and the target device, for example, by activating the "yes" icon 212***. An indication of a successful interaction between the setup wizard/remote control 10′ and the intended target device may then be used to lock the

> function codes for the function code set presently being utilized in the testing procedure to a device mode in the remote control 10′ which function codes are to be used to command the operation of the intended target device when the remote control 10′ is placed into that device mode.

EX1041, ¶101 (emphasis added).

261. Hayes also depicts the testing of multiple potential codesets in Figure 28.

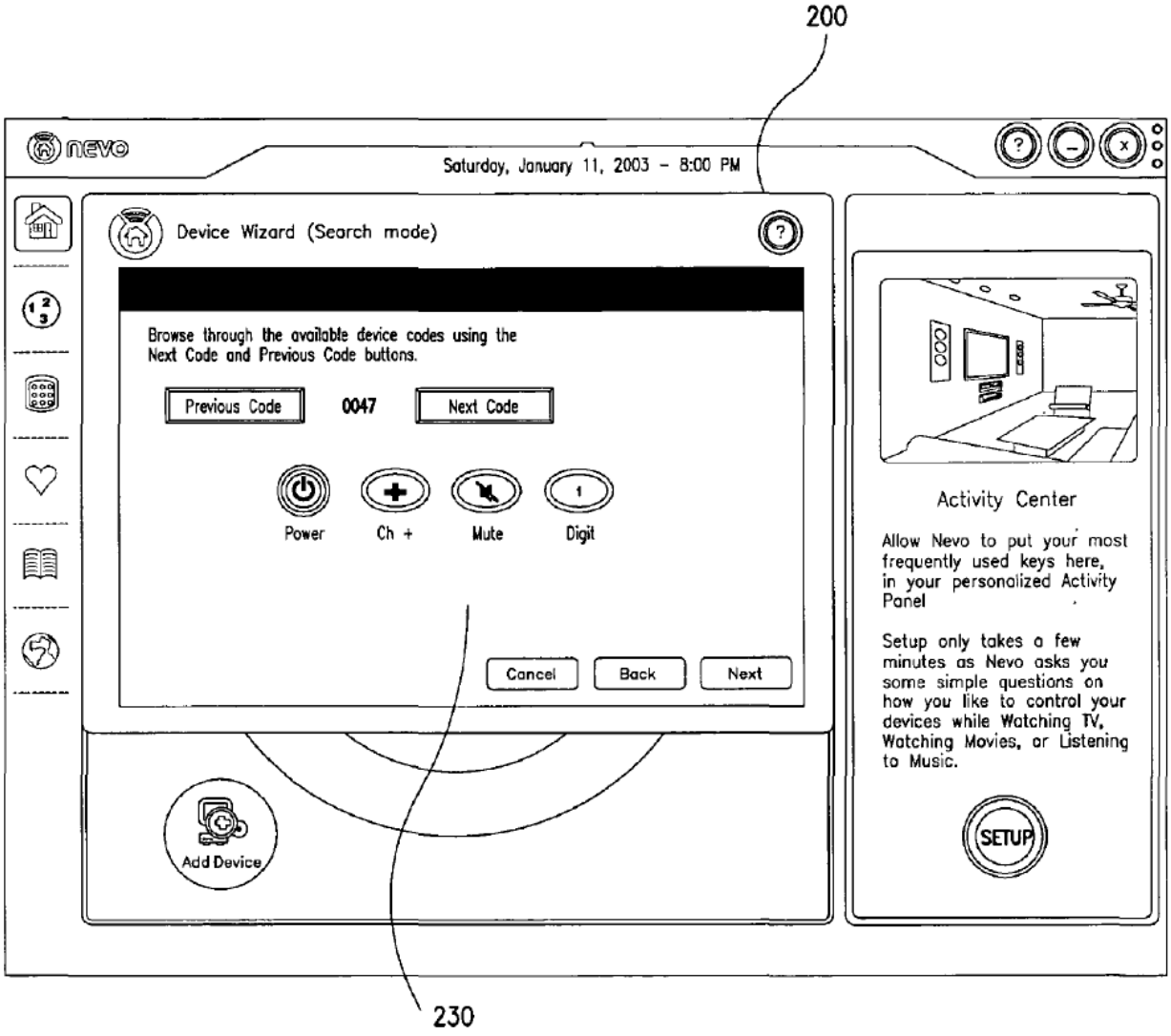


FIG. 28

EX1041, FIG. 28; EX1042, FIG. 28.

262. In this manner, Hayes also describes providing an indication that a second test corresponding to a second codeset was successful as recited in claim element 21[i]. In the combination, a signal such as the one described in Martis would indicate the success of the testing of the second codeset. EX1007, ¶¶25, 30-31; *See*

Section VI.D.3. This signal would be transmitted by the remote control described in Martis to Martis's set-top box system 16. A POSA would have been motivated to combine Martis, SVR-3000, and Hayes for the reasons that I explained in Section VI.C.

7. Claim Element 21[j]

263. Claim element 21[j] recites:

- **21[j]** <u>configuring the second codeset associated with the second test to the controlling device in response to the user indicating the second test was successful.</u>

264. The combination of Martis, SVR-3000, and Hayes discloses claim element 21[j]. I understand that Dr. Rosenberg explained during his deposition that the claimed "configuring" occurs at the remote control device and amounts to setting the second codeset within the remote control device for subsequent use. EX1043, 64:22-65:12, 75:4-11. I agree with this interpretation of the claims.

265. As I previously explained, SVR-3000 displays remote control setup numbers for a user to enter and test. EX1039, 0042, 0044.


Codes for SONY
Possible codes for this device are:
0043, 0067, 0075, 0117, 0130, 0136, 0170
Program your TV PWR, VOL, and MUTE buttons: Point the SVR Remote away from the Recorder and hold down the TV PWR and TIVO buttons on the Remote for 5 sec. Enter the first code using the numbers on the Remote. Test the TV PWR button. If it doesn't work, try the next code.
TV Power
Muting
TiVo Button

EX1039, 0042.

Note

- **In this method, when you find the correct code, it will automatically program the TV POWER, VOL +/–, and MUTING buttons on the Remote Control.**
- **If you have a stereo system connected to the SVR Recorder, you can program the POWER button on the Remote Control to turn on and off both the stereo and your TV. To do so, use code 1999 instead of 0999 in step 1.**
- **To reset the Remote Control back to the manufacturer's settings, press and hold the TiVo and TV POWER buttons together for three seconds until the LED on the Remote Control remains lit. Enter code 0981 (or 1981) using the number keys on the Remote Control.**

Code Search Method

Another method of programming the Remote Control to operate your TV and/or stereo system is the code search method. The Remote Control has hundreds of available codes. The correct code for your TV might be available, yet not listed on the screen for your TV brand.

1 Put the Remote Control in code search mode.

a) Press the TiVo button and TV POWER simultaneously for three seconds until the LED on the Remote Control remains lit continuously.

b) Release the buttons and the LED remains illuminated.

c) Using the number keys on the Remote Control, enter the code 0999.

2 Test the code.

a) Point the Remote Control at the TV, press TV POWER and see if the TV turns off or on.

b) If the TV does turn off or on, confirm that MUTE and VOL (volume) +/– also operate the TV. If they do, go to step 4 below. If they do not, continue with step 3.

3 Try another code.

Continue to cycle through each code by pressing CH+, then test the code by repeating step 2 above. Remember, there are hundreds of codes. If the LED goes out. you have reached the end of the codes.

4 Program the Remote Control with the correct code.

a) When the code allows the Remote Control to operate the TV power, volume and muting, press ENTER to set the code and exit Code Search mode.

b) You can also press CLEAR to exit Code Search mode without setting a new code.

EX1039, 0044.

266. This method instructs a user to "press TV POWER and see if the TV turns off or on." EX1039, 0044. If so, the instructions tell a user to "press ENTER to set the code and exit Code Search mode." *Id.* This setting of the particular code that results in a successful test discloses the claimed "configuring" of the remote control with the working codeset in response to the user indicating that the test was successful.

267. Similar to SVR-3000, Hayes also describes the claimed "configuring"

when a user has activated a "yes" button to indicate successful testing:

> An indication of a successful interaction between the setup wizard/remote control 10′ and the intended target device ***may then be used to lock the function codes for the function code set presently being utilized*** in the testing procedure to a device mode in the remote control 10′ which function codes are to be used to command the operation of the intended target device when the remote control 10′ is placed into that device mode.

EX1041, ¶101 (emphasis added).

268. In this manner, Hayes also discloses configuring the codeset to the remote control device based on successful testing of the codeset. A POSA would have understood that this codeset would be the second codeset when the second codeset is tested following the unsuccessful testing of the first codeset for the reasons that I explained with reference to claim elements 21[g], 21[h.0], 21[h.1], 21[h.2], and 21[i]. *See* Sections VI.E.4-6. A POSA would have been motivated to combine Martis, SVR-3000, and Hayes and would have understood that the combination would configure the remote control device to use the second codeset in response to successful testing to achieve the benefits that I described above. *See* Section VI.C.

E. Claim 22: The method as recited in claim 21 wherein the controllable function of the second controllable appliance consists of a power, volume, or channel up/down function of the second controllable appliance.

269. Claim 22 recites the tested controllable function consisting of a "power, volume, or channel up/down function." Revised MTA, Appendix A. SVR-3000 discloses testing power and volume functionality. EX1039, 0042, 0044.

270. SVR-3000 instructs the user to press a "TV POWER" button to test that the remote has been properly configured. *Id.*

EX1039, 0042.

Note

- **In this method, when you find the correct code, it will automatically program the TV POWER, VOL +/–, and MUTING buttons on the Remote Control.**
- **If you have a stereo system connected to the SVR Recorder, you can program the POWER button on the Remote Control to turn on and off both the stereo and your TV. To do so, use code 1999 instead of 0999 in step 1.**
- **To reset the Remote Control back to the manufacturer's settings, press and hold the TiVo and TV POWER buttons together for three seconds until the LED on the Remote Control remains lit. Enter code 0981 (or 1981) using the number keys on the Remote Control.**

Code Search Method

Another method of programming the Remote Control to operate your TV and/or stereo system is the code search method. The Remote Control has hundreds of available codes. The correct code for your TV might be available, yet not listed on the screen for your TV brand.

1 Put the Remote Control in code search mode.

a) Press the TiVo button and TV POWER simultaneously for three seconds until the LED on the Remote Control remains lit continuously.

b) Release the buttons and the LED remains illuminated.

c) Using the number keys on the Remote Control, enter the code 0999.

2 Test the code.

a) Point the Remote Control at the TV, press TV POWER and see if the TV turns off or on.

b) If the TV does turn off or on, confirm that MUTE and VOL (volume) +/– also operate the TV. If they do, go to step 4 below. If they do not, continue with step 3.

3 Try another code.

Continue to cycle through each code by pressing CH+, then test the code by repeating step 2 above. Remember, there are hundreds of codes. If the LED goes out. you have reached the end of the codes.

4 Program the Remote Control with the correct code.

a) When the code allows the Remote Control to operate the TV power, volume and muting, press ENTER to set the code and exit Code Search mode.

b) You can also press CLEAR to exit Code Search mode without setting a new code.

EX1039, 0044.

271. Additionally, SVR-3000 describes instructing a user to also try the "VOL (volume) +/–" buttons to confirm functionality. EX1039, 0044. If the device responds, SVR-3000 instructs the user to "press ENTER to set the code and exit." *Id.*

272. Hayes also discloses testing a power function as depicted in Figure 25. EX1041, ¶101, FIG. 25.

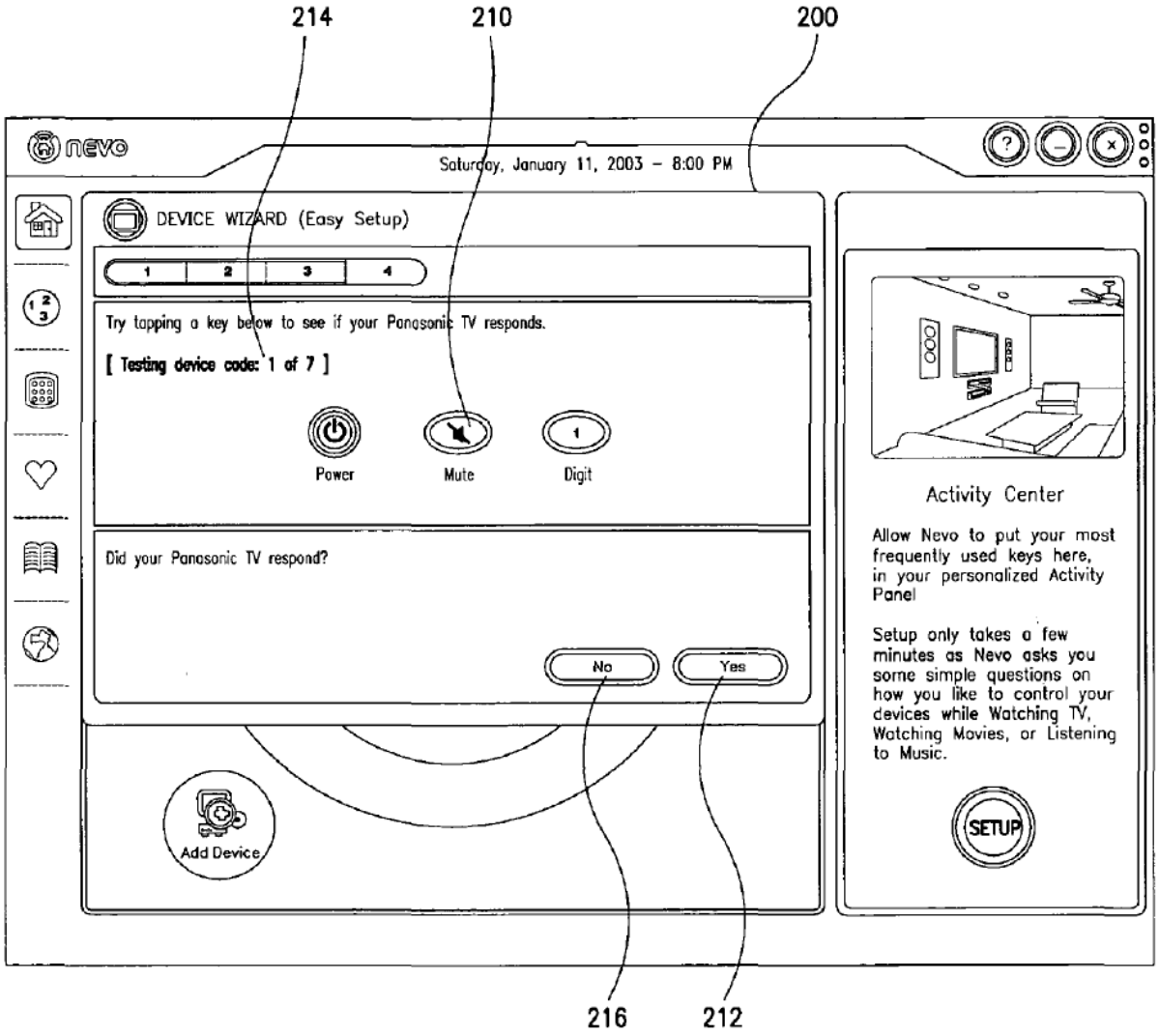


FIG. 25

EX1041, FIG. 25; EX1042, FIG. 25.

273. Thus, SVR-3000 and Hayes disclose claim 22.

F. Claim 23: The method as recited in claim 21 wherein the data associated with the second controllable appliance further comprises a third codeset associated with the type or brand of the second controllable appliance when the user indicates that the second codeset was unsuccessful in controlling at least one controllable function of the second controllable appliance.

274. Claim 23 recites identifying a third codeset when the user indicates that the testing of the second codeset was unsuccessful. Revised MTA, Appendix A. As I previously explained, claim 23 conflicts with claim 21, which requires that the second codeset is successful. *See* Section IV. Regardless, the combination of Martis, SVR-3000, and Hayes still renders obvious another third codeset used to communicate with the second controllable appliance when a second codeset is unsuccessful.

275. For example, SVR-3000 also describes testing multiple codesets when the first does not work: "3 Try another code. Continue to cycle through each code by pressing CH+, then test the code by repeating step 2 above." EX1039, 0044.

Note

- **In this method, when you find the correct code, it will automatically program the TV POWER, VOL +/–, and MUTING buttons on the Remote Control.**
- **If you have a stereo system connected to the SVR Recorder, you can program the POWER button on the Remote Control to turn on and off both the stereo and your TV. To do so, use code 1999 instead of 0999 in step 1.**
- **To reset the Remote Control back to the manufacturer's settings, press and hold the TiVo and TV POWER buttons together for three seconds until the LED on the Remote Control remains lit. Enter code 0981 (or 1981) using the number keys on the Remote Control.**

Code Search Method

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1 Put the Remote Control in code search mode.

a) Press the TiVo button and TV POWER simultaneously for three seconds until the LED on the Remote Control remains lit continuously.

b) Release the buttons and the LED remains illuminated.

c) Using the number keys on the Remote Control, enter the code 0999.

2 Test the code.

a) Point the Remote Control at the TV, press TV POWER and see if the TV turns off or on.

b) If the TV does turn off or on, confirm that MUTE and VOL (volume) +/– also operate the TV. If they do, go to step 4 below. If they do not, continue with step 3.

3 Try another code.

Continue to cycle through each code by pressing CH+, then test the code by repeating step 2 above. Remember, there are hundreds of codes. If the LED goes out. you have reached the end of the codes.

4 Program the Remote Control with the correct code.

a) When the code allows the Remote Control to operate the TV power, volume and muting, press ENTER to set the code and exit Code Search mode.

b) You can also press CLEAR to exit Code Search mode without setting a new code.

EX1039, 0044.

276. SVR-3000 depicts trying up to seven difference possible codes, which would include testing a third codeset if the first two codesets were not successful at controlling the target device. EX1039, 0042.

EX1039, 0042.

277. Thus, SVR-3000 describes "data" comprising multiple codesets to try when testing is unsuccessful.

278. Hayes also describes cycling through multiple code sets to try. For example, as depicted in Figure 25, Hayes describes the testing of potential seven device codes when indicating that it is currently "Testing device code: 1 of 7." EX1041, FIG. 25; EX1042, FIG. 25. In this manner, Hayes also discloses testing multiple codesets including a third codeset.

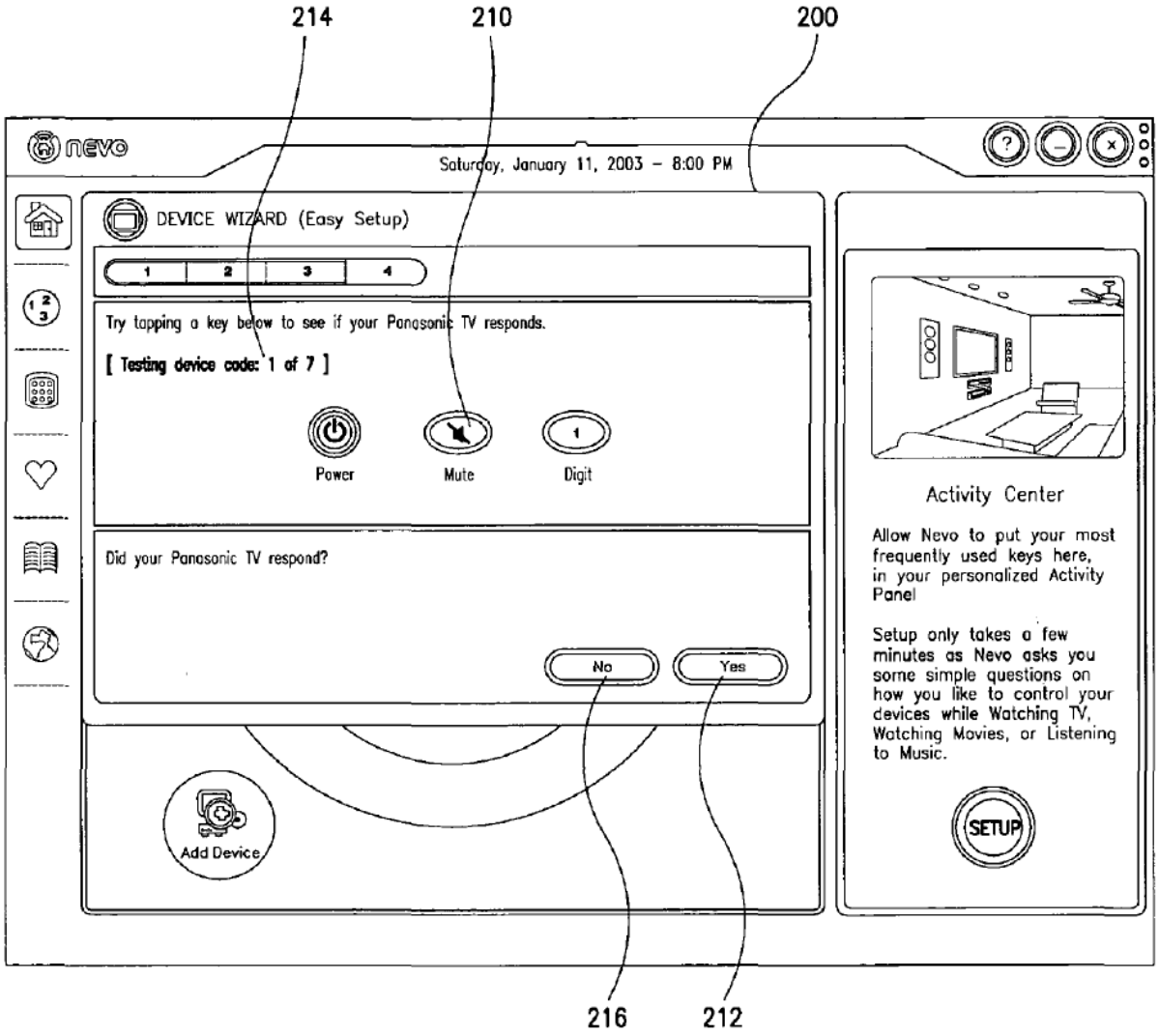

FIG. 25

EX1041, FIG. 25; EX1042, FIG. 25.

279. In the combination, Martis, SVR-3000, and Hayes would include additional remote control setup numbers to facilitate the continued testing described in SVR-3000 and Hayes. In this manner, a POSA would have been motivated and would have found combining Martis, SVR-3000, and Hayes to be a predictable combination of known prior art elements according to known methods to yield

predictable results. *See* Section VI.C.

I hereby declare that all statements made herein of my own knowledge are true and 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 imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed this 21st day of March 2022 in Crans-Montana, Switzerland.

Respectfully submitted,

John Tinsman