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(54) METHOD FOR ENHANCING DIGITAL VIDEO RECORDER TELEVISION ADVERTISING VIEWERSHIP

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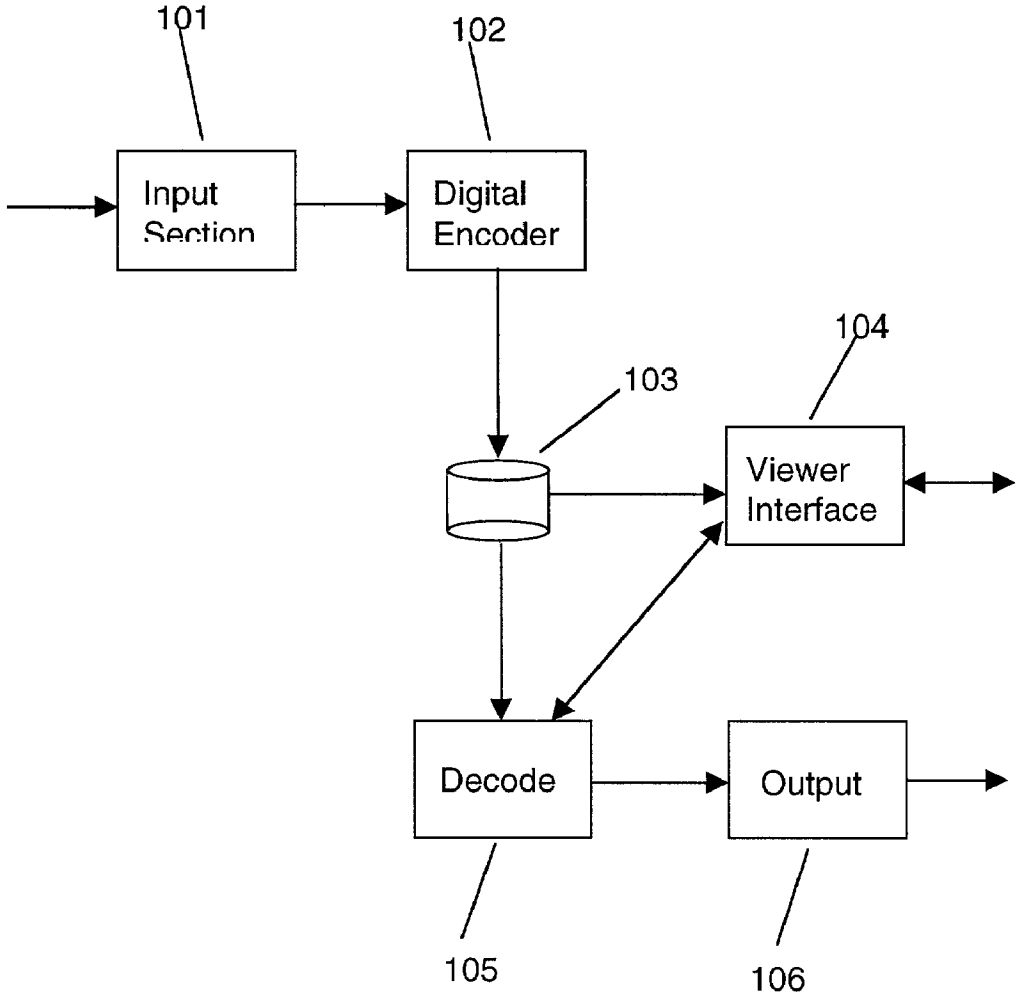
(57) **ABSTRACT**

A method for enhancing digital video recorder television advertising viewership provides a method wherein the first or last number of seconds of a commercial break are carefully authored to provide a "teaser" to entice the viewer to watch multiple commercials during the commercial break instead of skipping the commercial break using the fast forward or jump functions of the DVR. A bookending function displays an advertisement before and/or after a program that has been recorded on the DVR's storage device is played to the viewer. The viewer selects a recorded program from the DVR's storage device to playback. Before the program is played back, an advertisement is retrieved from the storage device and is displayed before the program is run. Another advertisement is retrieved and then played after the program is over.



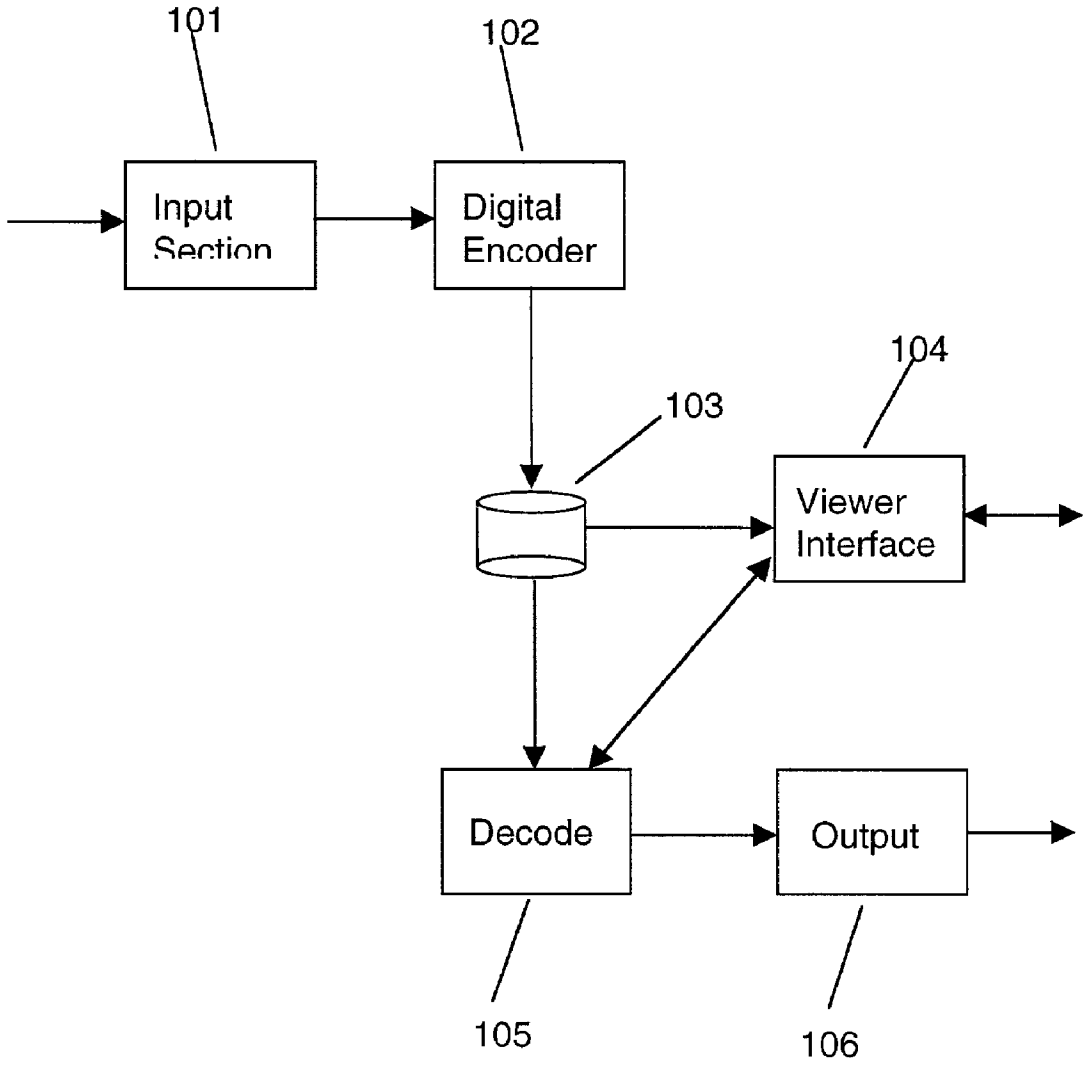

101
102
Input Section
Digital Encoder
104
103
Viewer Interface
Decode
Output
105
106

Fig. 1

201
Now Showing
The Simpsons Fri 7/9
The Simpsons Fri 7/9
Variety Show Sun 6/27
Inside Washington Sun 6/27
The Mask of Zorro Sat 6/26
Life of Brian Sat 6/26
Neil Simon's The Odd Couple II Sat 7/10
Radio Days Sat 7/10
202

Fig. 2

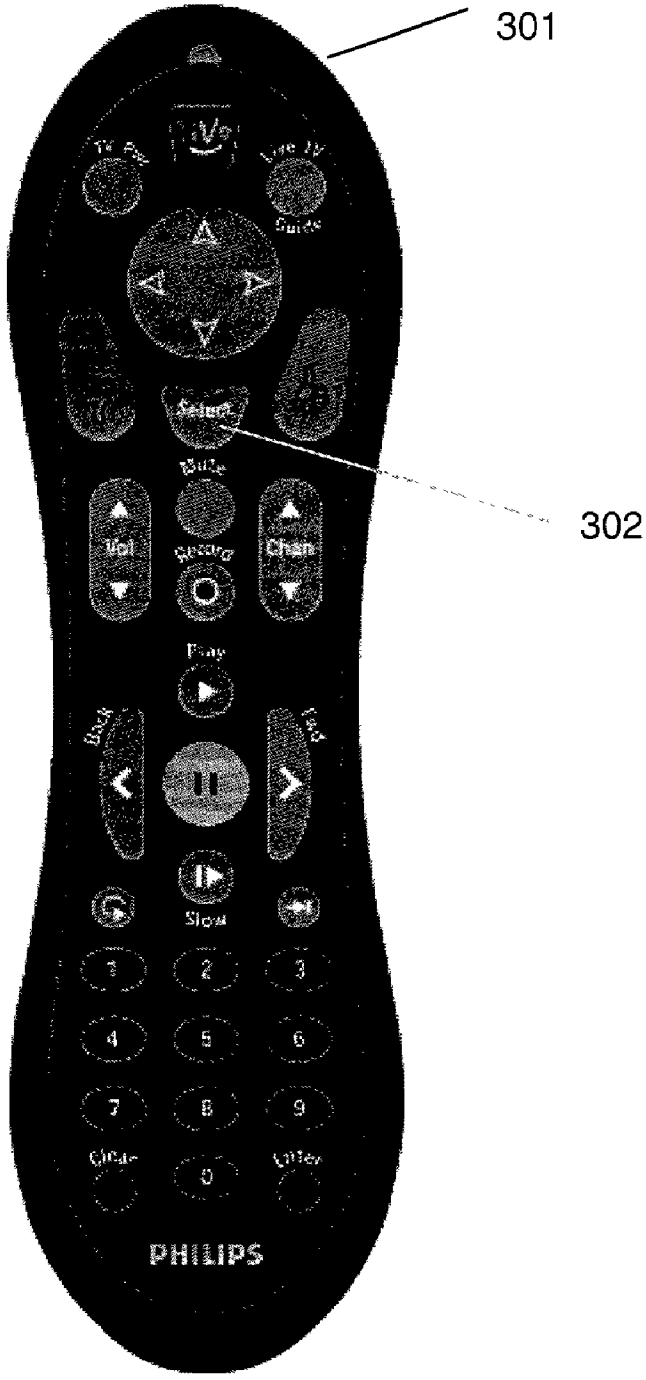


Fig. 3

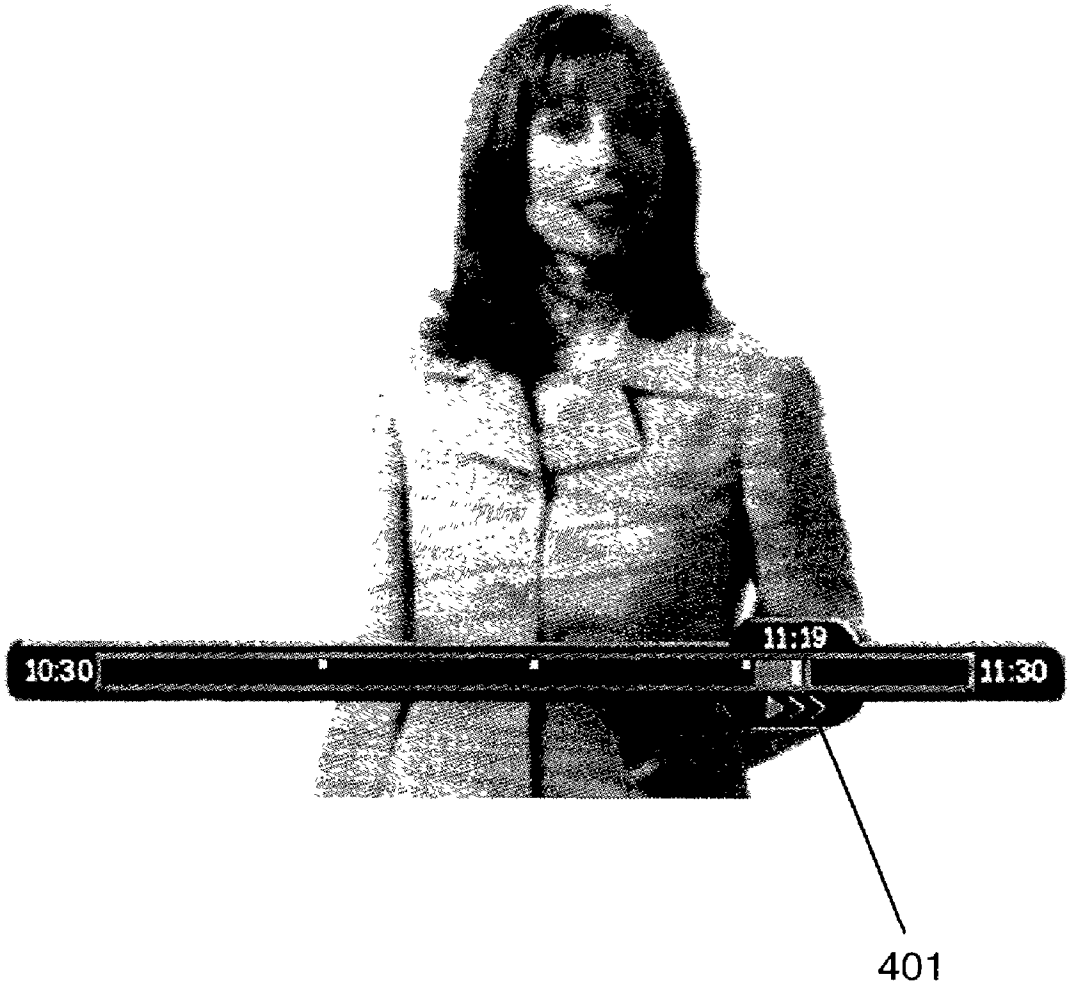


Fig. 4

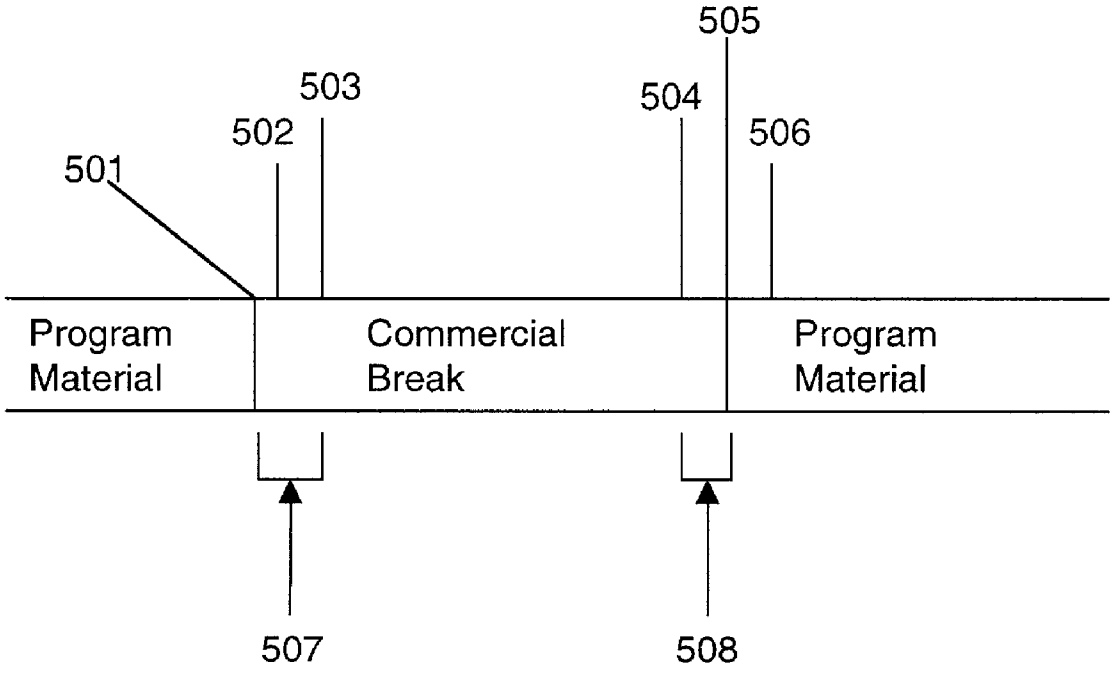

505
503
504
502
506
501
Program Material
Commercial Break
Program Material
507
508

Fig. 5

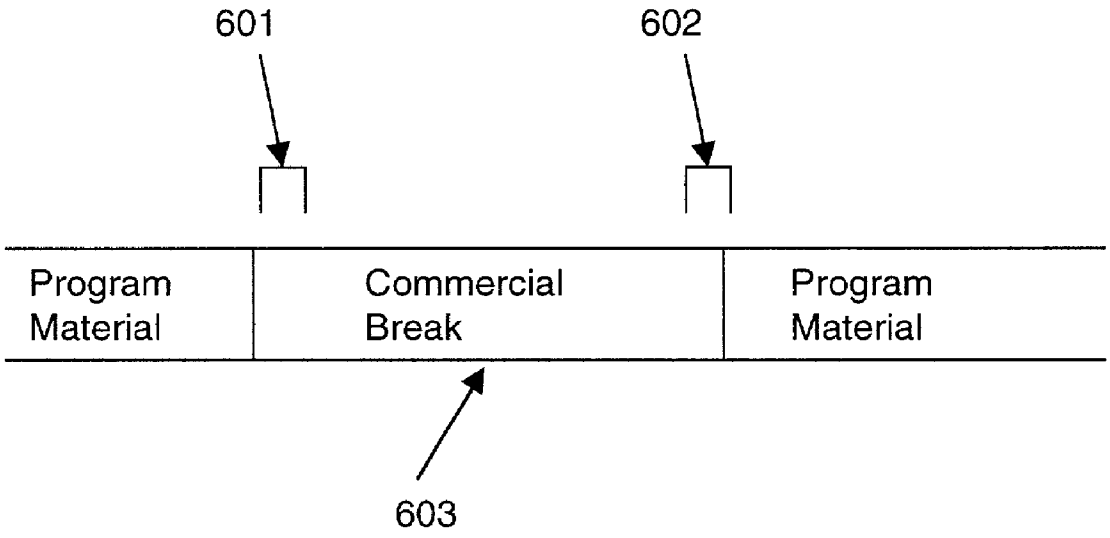

601
602
Program Material
Commercial Break
Program Material
603

Fig. 6

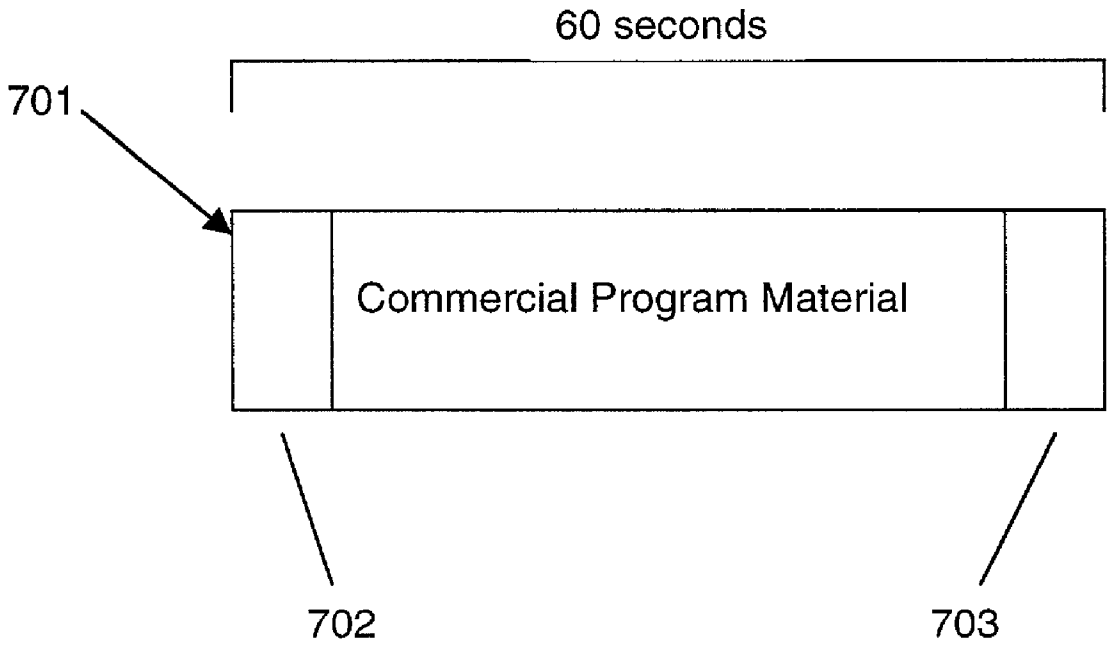


Fig. 7

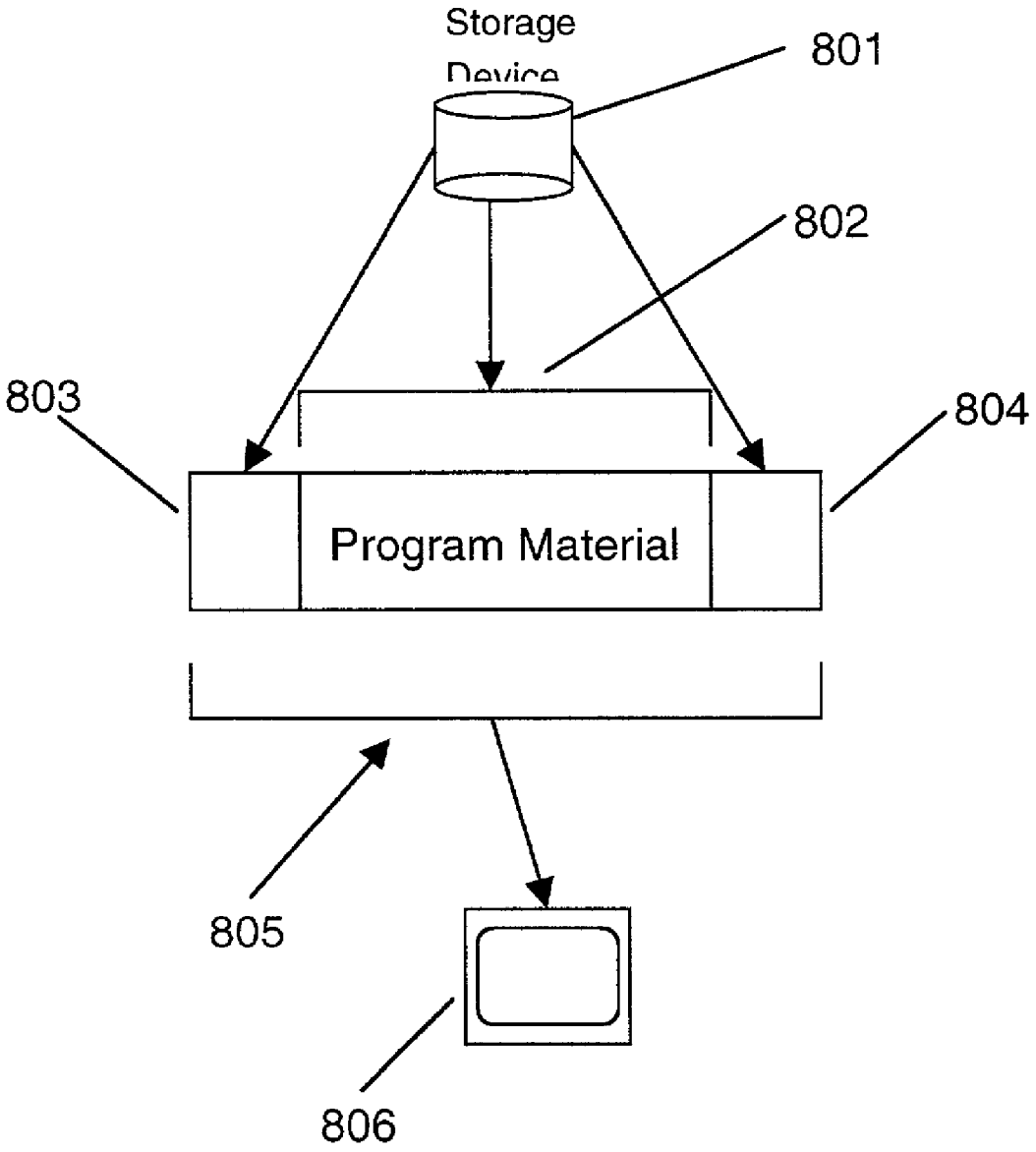


Fig. 8

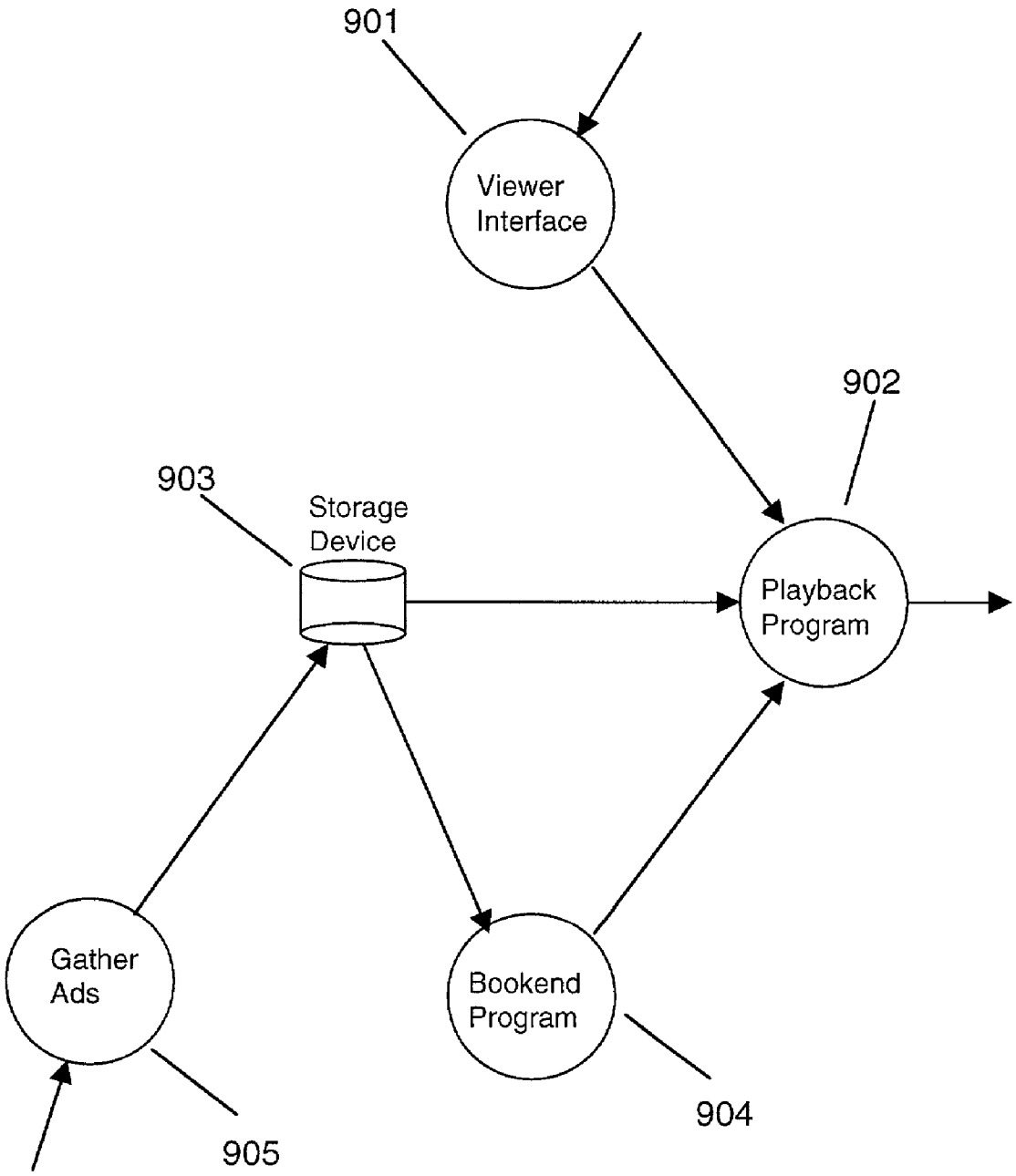

901
Viewer Interface
902
903
Storage Device
Playback Program
Gather Ads
Bookend Program
904
905

Fig. 9

METHOD FOR ENHANCING DIGITAL VIDEO RECORDER TELEVISION ADVERTISING VIEWERSHIP

BACKGROUND OF THE INVENTION

[0001] 1. Technical Field

[0002] The invention relates to the storing and viewing of television program material in a computer environment. More particularly, the invention relates to increasing the visibility of television advertisements in a computer environment.

[0003] 2. Description of the Prior Art

[0004] The introduction of Digital Video Recorders (DVR) have revolutionized the television recording industry. DVRs store program material onto a storage medium that is easily accessible, reusable, and the recording does not degrade over time as with video tapes.

[0005] DVRs give the viewer an unprecedented amount of control over how the viewer watches live and recorded television programs. One of the effects of the DVRs is that as viewers watch television programs stored on the DVR's storage medium, they have a tendency to skip over the commercial breaks.

[0006] Television broadcasters and advertisers have a negative viewpoint of the advent of the DVR. The feeling is that the DVR is destroying any purpose of advertising on the broadcast medium. Primetime no longer exists because viewers are not tied to the broadcaster's schedule. DVRs allow the viewer to easily store all of his desired programs for later viewing.

[0007] Broadcasters generate their revenue through the value of the commercial spots. Advertisers feel that they are losing their potential viewership "eyes." If advertisers do not believe that there is any value in a primetime commercial spot, then the broadcasters lose large proportions of their revenue.

[0008] On the other hand, DVR service providers also generate revenue through commercials. There is an extremely large potential market for specialized advertising that is shown directly to the target audience. DVRs have the ability to evaluate the viewer's viewing preferences and make inferences as to the viewer's lifestyle. With this personal information the DVR service providers can directly target the correct audience for advertisers.

[0009] It would be advantageous to provide a method for enhancing digital video recorder television advertising viewership that allows broadcasters to retain and improve the value of a certain portion of television commercial breaks. It would further be advantageous to provide a method for enhancing digital video recorder television advertising viewership that allows DVR service providers to present advertisements to viewers that do not usurp the broadcaster's advertising space.

SUMMARY OF THE INVENTION

[0010] The invention provides a method for enhancing digital video recorder television advertising viewership. The system allows the broadcaster to retain and improve the value of a certain segment of television commercial breaks. In addition, the invention provides a system that allows the Digital Video Recorder (DVR) service provider to present advertisements to viewers that do not usurp the broadcaster's advertising space.

[0011] A client device, typified in application Ser. No. 09/126,071, owned by the Applicant, provides functionality typically associated with the present generation of DVRs, such as the storage of a large amount of video content, ability to choose and play this content on demand, and full "VCR-like" control of the delivery of the content.

[0012] The invention provides a method wherein the first or last number of seconds of a commercial break are carefully authored to provide a "teaser" to entice the viewer to watch multiple commercials during the commercial break instead of skipping the commercial break using the fast forward or jump functions of the DVR. This teaser can be a set of images or logos that indicate a commercial relating to that advertiser is present or a menu or short sequence of animations to designed catch the viewer's attention and persuade him to watch the commercial break.

[0013] Further, advertisers can also place the more important content in the first or last number of seconds of their commercials. This content will get the desired message across to the viewer in those seconds.

[0014] The invention also provides a bookending function that displays an advertisement before and/or after a program that has been recorded on the DVR's storage device is played to the viewer. The viewer selects a recorded program from the DVR's storage device to playback. Before the program is played back, an advertisement is retrieved from the storage device and is displayed before the program is run. Another advertisement is retrieved and then played after the program is over.

[0015] The invention's bookending allows any ad material that is loaded onto the system to be displayed before and/or after any program material. Since the DVR system knows the viewer's program preferences (e.g., science fiction, police dramas) and, possibly, the viewer's personal information (e.g., male, age 27, likes photography), ads can be selected based on this information and targeted to the specific audience that the viewer is a part of.

[0016] Other aspects and advantages of the invention will become apparent from the following detailed description in combination with the accompanying drawings, illustrating, by way of example, the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] **FIG. 1** is a block schematic diagram of a preferred embodiment of a digital video recording system according to the invention;

[0018] **FIG. 2** is a diagram of a screenshot of a user interface menu listing recorded programs according to the invention;

[0019] **FIG. 3** is a diagram of an exemplary remote input device according to the invention;

[0020] **FIG. 4** is a diagram of a screenshot of a program playback mode according to the invention;

[0021] **FIG. 5** is a block schematic diagram showing a viewer's response to a commercial break within a program according to the invention;

[0022] **FIG. 6** is a block schematic diagram showing the important portions of a commercial break according to the invention;

[0023] **FIG. 7** is a block schematic diagram showing the important portions of a commercial according to the invention;

[0024] **FIG. 8** is a block schematic diagram of a preferred embodiment of the invention showing the bookending concept according to the invention; and

[0025] **FIG. 9** is a block schematic diagram of high level task viewpoint of a preferred embodiment of the invention implementing the bookending function according to the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0026] The invention is embodied in a method for enhancing digital video recorder television advertising viewership in a computer environment. A system according to the invention allows the broadcaster to retain and improve the value of a certain segment of television commercial breaks. In addition, the invention provides a system that allows the Digital Video Recorder (DVR) service provider to present advertisements to viewers that do not usurp the broadcaster's advertising space.

[0027] Referring to **FIG. 1**, time-shifting devices, or DVRs, take as input television broadcast signals from multiple signal sources. One such method is described in application Ser. No. 09/126,071 entitled "Multimedia Time Warping System" owned by the Applicant. The input Section **101** selects the input source and directs the signal to the Digital Encoder **102**. If the signal source is analog, the Digital Encoder **102** converts the analog signal to a digital form, e.g., MPEG2. For digital signals such as digital satellite feeds, the Digital Encoder **102** can directly store the digital signal or convert the digital signal to a different sample rate.

[0028] Digital signals are stored on a persistent storage device **103**, e.g., a magnetic hard disk or RAM device. Multiple programs are stored on the storage device **103** and are easily accessed by the viewer. The viewer selects the desired program stored on the storage device **103** through the Viewer Interface **104**.

[0029] The selected program is accessed from the storage device **103** and decoded into analog form for presentation onto a television set by the Decode module **105**. If the display is a digital monitor, for example, the Decode module **105** converts the stored program into the proper digital format. The Output module **106** presents the Decode module's **105** output into an acceptable signal format (analog or digital) to the viewer's television or monitor.

[0030] With respect to **FIGS. 2 and 3**, the invention presents the viewer with a list **201** of the programs stored on the storage device. The viewer highlights the desired program using a remote input device **301**. The program is then selected when the viewer presses the select button **302**. Each program is randomly accessible, a program may be viewed and deleted irrespective of its recorded sequence. This is unlike video cassette tapes that do not give the viewer the convenience of easily accessing a particular recorded program on a tape or inserting new recordings amidst a populated tape.

[0031] Referring to **FIG. 4**, DVRs allow the viewer to perform many trick play functions **401** on the program being viewed. The viewer can fast forward and rewind at multiple speeds, pause, single step, slow play, etc. through the program material.

[0032] The invention of time-shifting devices for television programs has also created the opportunity for television viewers to fast-forward through commercial advertisements if the viewer is watching a recorded program, or a live, cached program where the current viewing position is delayed from the current real-time television broadcast.

[0033] Since there is little economic incentive for viewers to watch commercials in those cases, the value of the space made available for advertising drops precipitously. However, in examining the behavior of viewers, it is apparent that a newly valuable advertising space has been created at the beginning or ending of a commercial break.

[0034] With respect to **FIG. 5, a** preferred embodiment of the invention provides a method for enhancing the viewership of television ads on a DVR by taking into account the viewer's interaction with the inherent operation of the DVR. Whether the technique is a visual fast-forward (TiVo) or fixed-time (e.g., 30 seconds) skip function (ReplayTV), there is a delay from when the viewer realizes **502** that the program material has ended and advertising has begun **501**, and when the viewer starts skipping the commercial using the remote input device **503**. Several factors are involved in the viewer's response time. The viewer must first recognize **502** that the program material has ended **501**. Once the viewer realizes that the event has occurred, he must then press a button **503** on the remote input device.

[0035] Often, the time span **507** from the end of the program **501** to the point where the viewer has pressed the button **503** is tens of seconds long. Thus, the first few seconds of any commercial break become extremely valuable as an opportunity to get the viewer to NOT skip the commercial break. Advertisers will pay additional money for the opportunity to occupy this space in the commercial breaks.

[0036] Similarly, when fast-forwarding or skipping, it is typical that the viewer will not be able to precisely skip to the beginning of the program material **505**. When examining viewer behavior, most viewers will skip forward **506**, then back up **504** into the preceding commercial break a few seconds in order to view all of the program material from the point where it starts **505**. Therefore, the last few seconds of a commercial break **508** become extremely valuable, since it is an opportunity to persuade the viewer to rewind into the commercial break and view advertisements.

[0037] Referring to **FIG. 6**, the invention provides a method wherein the first few seconds **601** or last few **602**, are carefully authored to provide a "teaser" to entice the viewer to watch multiple commercials during the break **603**. This teaser might be a set of images or logos that indicate a commercial relating to that advertiser is present or a menu or short sequence of animations to designed catch the viewer's attention and persuade him to watch the commercial break.

[0038] With respect to **FIG. 7**, advertisers can also place the more important content in the first **702** or last **703** number of seconds of their commercials **701**. This content

will be able to get the desired message across to the viewer in those seconds. Given this model, content providers are able to charge advertisers a higher rate to place their commercials at the beginning or the end of a commercial break.

[0039] Further, one can imagine using the CC tagging technology as described in application Ser. No. 09/665,921 entitled "Closed Caption Tagging System" owned by the Applicant, or similar technology such as ATVEF or Wink, to automatically pause the program being watched immediately at the beginning (or end) of the commercial break, with the frame being displayed containing a menu of the advertisements in the commercial break. The viewer might simply skip forward, or choose a particular commercial via a menu-like overlay on top of the broadcast image using the on screen display (OSD).

[0040] Another method used is described in application Ser. No. 09/187,967 entitled "Analog Video Tagging and Encoding System." The network content provider authors an invisible tag at the beginning of the "pod" (the sequence of ad avails) that tells a decoder (such as TiVo's Time Warping System) what all the commercials in the pod are, thereby allowing the decoder to display an instant menu of ads.

[0041] Further, it is possible using the CC tagging technology, or similar techniques, to cause an "auto-pause" capability. For example, instead of presenting a menu, a short "teaser" image or multi-frame video could introduce an advertisement, and then automatically pause. The viewer might hit "play" to watch the advertisement or fast-forward to skip to the next advertisement, which would present a similar teaser and then pause. With a just few button presses, the viewer could skip the commercial break and start the program, or watch one or more advertisements in the break.

[0042] As noted above, the invention stores program material on a storage medium. A viewer accesses the programs through a user menu. The viewer selects the desired program by highlighting the appropriate program and pressing the select button. Once the program is selected, it is then displayed.

[0043] Referring to **FIG. 8**, "bookending" concerns the display of the program material **802**. The program **802** is indexed and retrieved from the Storage Device **801**. Before the program **802** is displayed an ad **803** is first displayed before the program is run. Another ad **804** is then played after the program is over. The invention's bookending allows any ad material that is loaded onto the system to be displayed before and/or after any program material. The ads and program material **805** are displayed to the viewer **806**.

[0044] The ads are stored on the Storage Device **801**, indexed and, optionally, stored along with the characteristics of each ad. The choice is up to the DVR system or provider as to whether an ad is played before, after, or both before and after any program material.

[0045] With respect to **FIG. 9**, the invention stores program material and ads on the storage device **903**. The Viewer Interface module **901** displays the list of stored programs to the viewer and accepts the viewer program selections. The Playback Program module **902** finds and extract the selected program from the Storage Device **903**.

[0046] Bookending ads are selected by the Bookend Program module **904**. The Bookend Program module **904** decides whether to display an ad before and/or after the program material—configurable by the DVR service provider. Each ad is selected from the Storage Device **903** by the Bookend Program module **904**.

[0047] The Playback Program module **902** makes a request to the Bookend Program module **904** for an ad to display. The request is made before and after the Playback Program module **902** displays the program material. If an ad is passed to the Playback Program module **902** by the Bookend Program module **904**, then it is displayed. Otherwise, the Playback Program module **902** continues on without displaying an ad.

[0048] Since the DVR system knows the viewer's program preferences (e.g., science fiction, police dramas) and, possibly, the viewer's personal information (e.g., male, age **27**, likes photography), ads can be selected by the Bookend Program module **904** based on this information. The Bookend Program module **904** selects ads targeted to the specific audience that the viewer is a part of. This allows the DVR service provider to charge advertisers for targeted advertising which is much more valuable than shotgun advertising that occurs in normal television commercial breaks.

[0049] Ads are downloaded onto the Storage Device **903** via a modem, Ethernet, recorded at a predetermined time from an input source, etc. by the Download Ads module **905**. The DVR can request ads from a central server or record certain groups of ads for the viewer's target audience.

[0050] Although the invention is described herein with reference to the preferred embodiment, one skilled in the art will readily appreciate that other applications may be substituted for those set forth herein without departing from the spirit and scope of the present invention. Accordingly, the invention should only be limited by the claims included below.

1. A process for enhancing the viewership of television advertisements in a digital video recorder (DVR) environment, comprising the steps of:

partitioning the beginning and end of each commercial break in a program segment;

wherein each partition is of a predetermined length of time; and

wherein said beginning and end partitions are carefully authored to provide a teaser to entice the viewer to watch multiple commercials during the break.

2. The process of claim 1, wherein said teaser is a set of images or logos that indicate a commercial relating to a particular advertiser is present.

3. The process of claim 1, wherein said teaser is a menu or short sequence of animations designed to catch the viewer's attention and persuade him to watch the commercial break.

4. A process for enhancing the viewership of television advertisements in a digital video recorder (DVR) environment, comprising the steps of:

partitioning the beginning and end of a television advertisement;

wherein each partition is of a predetermined length of time; and

wherein said beginning partition and said end partition contain the more important content designed to get the desired message across to the viewer in the predetermined length of time.

5. A process for enhancing the viewership of television advertisements in a digital video recorder (DVR) environment, comprising the steps of:

providing a storage device;

recording television program material onto said storage device;

receiving advertisements from an external source;

storing said advertisements on said storage device;

selecting an advertisement from said storage device;

playing back said television program material from said storage device to the viewer; and

wherein said playing back step displays said advertisement to the viewer before and/or after said television program material is played back to the viewer.

6. The process of claim 4, wherein said selecting step selects said advertisement based on the viewer's viewing preferences and/or personal data.

7. The process of claim 4, wherein said selecting step selects an advertisement to be displayed after said television program material is played back to the viewer that is different than the advertisement displayed before said television program material is played back to the viewer.

8. An apparatus for enhancing the viewership of television advertisements in a digital video recorder (DVR) environment, comprising:

a storage device;

a module for recording television program material onto said storage device;

a module for receiving advertisements from an external source;

a module for storing said advertisements on said storage device;

a module for selecting an advertisement from said storage device;

a module for playing back said television program material from said storage device to the viewer; and

wherein said playing back step displays said advertisement to the viewer before and/or after said television program material is played back to the viewer.

9. The process of claim 7, wherein said selecting module selects said advertisement based on the viewer's viewing preferences and/or personal data.

10. The process of claim 7, wherein said selecting module selects an advertisement to be displayed after said television program material is played back to the viewer that is different than the advertisement displayed before said television program material is played back to the viewer.

11. A program storage medium readable by a computer, tangibly embodying a program of instructions executable by the computer to perform method steps for enhancing the viewership of television advertisements in a digital video recorder (DVR) environment, comprising the steps of:

providing a storage device;

recording television program material onto said storage device;

receiving advertisements from an external source;

storing said advertisements on said storage device;

selecting an advertisement from said storage device;

playing back said television program material from said storage device to the viewer; and

wherein said playing back step displays said advertisement to the viewer before and/or after said television program material is played back to the viewer.

12. The method of claim 10, wherein said selecting step selects said advertisement based on the viewer's viewing preferences and/or personal data.

13. The method of claim 10, wherein said selecting step selects an advertisement to be displayed after said television program material is played back to the viewer that is different than the advertisement displayed before said television program material is played back to the viewer.

* * * * *