Viewer-controlled interactive application of special effects to television signal

Abstract

An apparatus is described which gives a television viewer the ability to interactively modify the output of a television by selectively applying special effects (F/X) to the external television input signal through the use of a controller. Applicable special effects include: drawing on the television screen display; overlaying animated and still images and text on the display at selected locations; transforming selected portions of the display by such means as coloring, warping, and "morphing"; selectively segmenting and relocating portions of the display, and overlaying the audio signal.

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References Cited

U.S. Patent Documents

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Claims

What is claimed is:

1. A system by which a television viewer can apply special effects (F/X) to the external input signal of a television by means of a controller.

2. The special effects of claim 1 serve to modify the audio and video output of the television.

3. The controller of claim 1 allows the viewer interactive and selective control of the special effects application.

4. The applicable special effects of claim 1 consist of: drawing on the television screen display; overlaying animated and still images and text on the display at selected locations; transforming selected portions of the display by such means as coloring, warping, and "morphing"; selectively segmenting and relocating portions of the display, and overlaying the audio signal.

5. The system of claim 1 comprises: a processor that applies special effects to a television input signal to produce a modified television output signal; and a controller that allows a viewer to select which special effects are applied by the processor.

Description

FIELD OF THE INVENTION
The invention pertains to the fields of television signal processing, special effects production, and user control of these functions.

BACKGROUND OF THE INVENTION
A television viewer currently has limited options for controlling what appears on television given the availability of programming choices such as television channels, recordings, and games. For television channels, the viewer may select one (or more, for some televisions) to watch; for a recording, depending on the playing device, the rate, direction, and starting point are selectable; and for games, the scene sequence is highly dependent on viewer interaction through a controller. For all of these media, the viewer option is essentially to have some control over which scene appears on the screen; aside from low-level audio and video quality controls, scenes appear either entirely or not at all. The purpose of this invention is to allow a viewer to *modify* scenes through the intentional application of special effects, for example, by drawing on them.

BRIEF DESCRIPTION OF THE DRAWINGS
FIG. 1 is a diagram of a system embodying the invention.
FIG. 2 is an example of a remote special effects control.

DETAILED DESCRIPTION

This invention gives a television viewer the ability to interactively modify the output of a television by selectively applying special effects (F/X) to the external television input signal through the use of a controller. Applicable special effects include: drawing on the television screen display; overlaying animated and still images and text on the display at selected locations; transforming selected portions of the display by such means as coloring, warping, and "morphing"; selectively segmenting and relocating portions of the display, and overlaying the audio signal.

Referring to FIG. 1, the television 1 displays as its output the input signal containing viewer applied special effects 2. The special effects are initiated under the control of the viewer using the controller 6 (an example of which is given in FIG. 2) by sending a control signal 5 to the special effects processor 3. The special effects processor applies the desired special effect by modifying the external television input signal 4 to produce the modified signal.

Referring to FIG 2, a stylus is being used to select a "flush" special effect to simulate the effect of flushing the current contents of the television display down a toilet. The freeze button allows the viewer to freeze the action on the screen while other effects are applied to it. The remaining buttons represent various categories of special effects: audio, animation, and interactive (such as drawing).
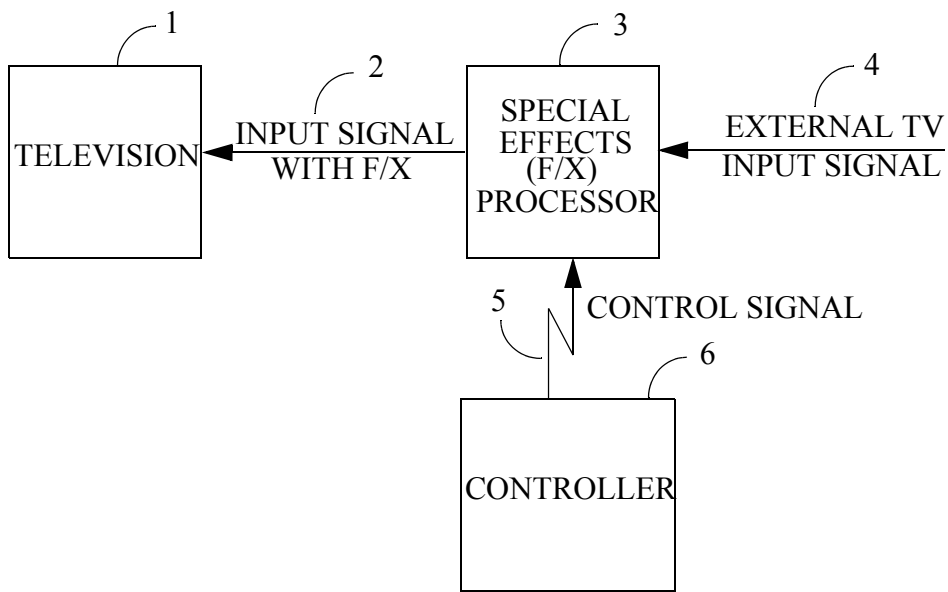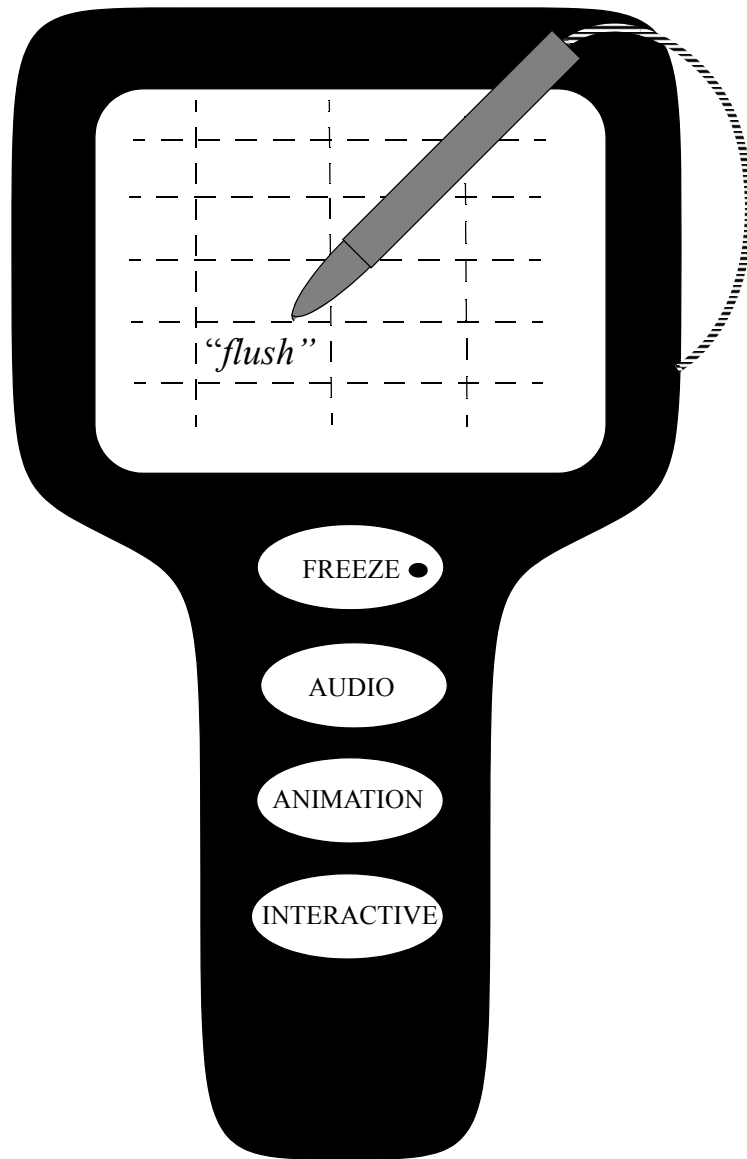
FIG. 1 - SYSTEM DIAGRAM

FIG. 2 - EXAMPLE REMOTE CONTROL