

## INTERACTIVE AUDIO-VISUAL TOY

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

The present invention relates to the field of electronic toys. More particularly, the present invention relates to a cost-effective interactive toy that displays successive pictorial scenes and concurrently outputs audio to prompt interactive participation by the user.

#### 2. Description of Art Related to the Invention

Over the last few decades, designers in the toy field have developed many types of audio-visual toys. An audio-visual toy is defined as a device that concurrently (i) produces one or more pictorial scenes in succession and (ii) outputs audio that narrates a portion of a featured story represented by the pictorial scene. For example, there exists audio-visual toys that produce continuous pictorial scenes accompanied by audio, without soliciting any active participation by the user. These toys operate as story-telling devices and may not be used as interactive, educational tools. Another type of audio-visual toy provides a number of discrete pictorial scenes, each of which is successively displayed after a predetermined period of time has elapsed. However, this time period is not adjustable precluding a child from actively participating in the story according to his or her own level of understanding.

Albeit some audio-visual toys are "interactive" by allowing its user to actively participate in selecting narrative portions of the featured story, they may suffer from a number of disadvantages.

One disadvantage is that conventional interactive audio-visual toys are expensive which prevents adults of modest means from purchasing these toys for their children. The expensive nature of the interactive toys are due partially to the requirement that a costly display monitor (e.g., projection equipment, cathode ray tube, a flat panel display, etc.) and associated circuitry is needed to display the pictorial scene for the user.

Another disadvantage is that conventional interactive audio-visual toys usually are heavy and cumbersome. This characteristic prevents such interactive audio-visual toys from being truly portable.

Yet another disadvantage is that most conventional interactive audio-visual toys are too complex for young children to set-up or use. Such complexity may discourage the child from using the audio-visual toy.

Still another disadvantage is that conventional interactive audio-visual toys are designed with multiple independent components working in collaboration. This increases the likelihood that the toy may be inoperable if one of the components becomes damaged or lost.

#### SUMMARY OF THE INVENTION

An interactive audio-visual toy that includes a base unit that receives a removable audio-visual ("AV") cassette used to convey a featured story having a number of selectable story lines. The base unit controls the AV cassette to successively display the pictorial scenes without the use of expensive display hardware and associated circuitry or equipment and to output audio from a pre-recorded audio cassette tape mounted onto the bottom side of the AV cassette. This interactive audio-visual toy is portable for entertaining the child in and away from one's residence.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The features and advantages of the present invention will become apparent from the following detailed description of the present invention in which:

FIG. 1 is a perspective view of an embodiment of a fully assembled audio-visual toy comprising a removable audio-visual ("AV") cassette and a base unit.

FIG. 2 is a perspective view of the fully assembled interactive toy of FIG. 1 with the AV cassette loaded into the base unit that automatically indexes the picture scroll for displaying pictorial scenes through a transparent viewing window of the AV cassette.

FIG. 3 is a cut-away rear view of the fully assembled, interactive audio-visual toy illustrating devices implemented within a stand portion of the base unit.

FIG. 4 is a cut-away face view of the fully assembled, interactive audio-visual toy illustrating the pictorial drive control mechanism that controls the rotation of the rollers used to index the picture scroll.

FIG. 5 is a cross-sectional view of the fully assembled, interactive audio-visual toy taken along lines 5—5 of FIG. 4.

FIG. 6 is a cross-sectional view of the AV cassette taken along lines 6—6 of FIG. 1 to illustrate the propagation path of the picture scroll.

FIG. 7 is a perspective view of a second embodiment of a fully assembled, interactive audio-visual toy utilizing a manual pictorial scene indexing scheme.

FIG. 8 is a block diagram of the overall control system of an exemplary embodiment of the present invention.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

The following description sets forth a preferred embodiment of the present invention in order to enable any person skilled in the mechanical or electrical toy fields to make and use the invention. It is contemplated, however, that various modifications of the present invention may be readily apparent to those skilled in the art. Therefore, the spirit and scope of the present invention should be based on the claims presented below.

Referring to FIG. 1, a perspective view of one embodiment of the interactive audio-visual toy 100 being loaded is shown. The interactive audio-visual toy 100 includes a removable audio-visual ("AV") cassette 110 and a base unit 120 which controls the operations performed to the AV cassette 110. The AV cassette 110 may be replaced with another AV cassette featuring a different featured story (e.g., an animated fictional or non-fictional story, an educational lesson, etc.).

Having a size approximately equal to a VHS tape, the AV cassette 110 includes a casing 111, enclosing a pair of rollers 112 and 113 on which a picture scroll 114 is wound. Preferably made of hardened plastic, the casing 111 has a top surface 111a with a transparent viewing window 115 made of a clear plastic. The sizing of the transparent viewing window 115 is sufficient to allow the user to view at least one pictorial scene 116 (e.g., a drawing visually conveying a portion of a story) printed on the picture scroll 114 as it is indexed to display a featured story. The pictorial scene 116 may also include indicia (e.g., numbers, letters, images, etc.) proximate to or under interactive control buttons 125a—125d.

Implementing multiple medium types (e.g., visual and audio) into a single unit poses a number of advantages such as, for example, increasing durability and mitigating the difficulty of loading and unloading the AV cassette 110. Moreover, additional advantages include, but are not limited to, ensuring that the audio and its corresponding featured