A voice-recognition control circuit and method for using the voice-recognition control circuit in connection with a toy. The toy has a predetermined name associated with it, but the predetermined name is not visibly displayed to the consumer. The voice-operated control circuit contains an audio detector, such as a microphone, to detect sound, an integrated circuit to determine when the detected sound matches the predetermined name associated with the toy, and an audio output device, such as a speaker, for providing audible indication of when the detected sound matches the predetermined name associated with the toy.
FIG. 1

10

16

INTEGRATED CIRCUIT

AUDIO OUTPUT DEVICE

14

AUDIO RECEIVER

12
START

AUDIO DETECTED?

DETECTED AUDIO MATCHES PREDETERMINED AUDIO X?

COUNTER = COUNTER + 1

COUNTER = PREDETERMINED NUMBER?

PLAY PREDETERMINED AUDIO Y

PLAY PREDETERMINED AUDIO Z

RESET COUNTER

FIG. 2
TOY HAVING VOICE RECOGNITION AND METHOD FOR USING SAME

FIELD OF INVENTION

[0001] The present invention relates generally to consumer products and a method for using voice recognition. More particularly, the present invention relates to toys responsive to specific words in order to personalize the toy to a consumer.

BACKGROUND OF THE INVENTION

[0002] Toys utilizing voice recognition or that are responsive to sound are generally known in the art. In some prior art toys, users are provided with a known list of voice commands to activate a toy. In other prior art, the toy will activate so long as the received sound falls within a predetermined frequency range. In still other prior art, the toys are activated as soon as the received sounds exceed a predetermined volume, i.e., the devices are activated in real time with the reception of the sound. In such cases, the toy manufacturer is likely to provide a consumer with instructions regarding which words or audio signals the toy will respond or activate.

[0003] Toy manufacturers will also generally create names for their toys, such as Barbie®, Elmo® or Mickey Mouse®, and prominently display the name on the toy packaging or associated labeling. Because the toy already has a name associated with it, a consumer is unlikely to personalize the toy by choosing a different name for the toy.

[0004] It is desirable, therefore, to provide a toy having a predetermined name, but the predetermined name is not initially provided to the consumer, the toy further having voice recognition capabilities, such that the toy plays one or more predetermined audible sounds when it receives voice signals matching the predetermined name. Accordingly, when the user speaks a name of his/her own choosing, if the spoken name matches the predetermined name and the toy activates in response to the spoken name, the user may feel a personal attachment to the toy. And if the toy were amongst many other toys in a store, even if the toys were almost identical, the user may be more inclined to purchase the toy that responds to a name he/she personally selected.

SUMMARY OF THE INVENTION

[0005] The present invention provides for an integrated circuit ("IC") having voice recognition capabilities and method for using the IC and voice recognition software in connection with a consumer product, and more specifically, a toy. In a preferred embodiment of the present invention, the IC is operatively connected to an audio detector and an audio output device.

[0006] The present invention further provides for identifying at least one consumer product, and more specifically, a toy, amongst a plurality of consumer products (i.e., toys). In a preferred embodiment of the present invention, the toy will have a predetermined name associated with it; however, the predetermined name associated with the toy will not be indicated on any packaging or labeling associated with the toy so as to be initially unknown to the consumer. When the consumer speaks the predetermined name, the toy will play a predetermined sound, thereby letting the consumer know that the predetermined name is associated with that specific toy. The desired effect is to create a personal attachment to, and/or encourage the purchase of, a toy. For example, if the toy were a dog named "Spot," if the toy hears a consumer call the name  "Spot", the dog will bark. The dog may be programmed to periodically provide other audio sounds in response to hearing the predetermined name. For example, after the 100th time the dog hears a user call the name "Spot," the dog may say "I love you!"

[0007] The present invention further provides for adaptation to digital or virtual consumer products. The software applications providing access to such digital or virtual consumer products may be used in connection with computers, tablets, such as an iPad®, mobile devices, such as a smartphone or an iPod®, or any similar device capable of running software applications.

[0008] A more complete understanding of the present invention will be afforded to those skilled in the art, as well as a realization of additional advantages and objects thereof, by a consideration of the following detailed description. Reference will be made to the accompanying drawings which will first be described briefly.

DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is an exemplary block diagram of a voice-recognition control circuit in accordance with the present invention.

[0010] FIG. 2 is an exemplary flow diagram showing the steps of operating the toy in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0011] The present invention provides for an IC having voice recognition capabilities and a method for using the same. In the detailed description that follows, like reference numbers are used to indicate like elements appearing in one or more of the figures.

[0012] FIG. 1 shows a voice-recognition control circuit 10 for a toy or other electrical device that includes an audio receiver 12, such as a microphone, an audio output device 14, such as a speaker, and an IC 16 that includes at least one counter (not shown). In a preferred embodiment of the present invention, a Generalplus GPCPE048A sound controller for digital sound processing and voice recognition is used for the IC 16. It should be obvious to one skilled in the art that other circuit implementations utilizing other components or combinations of components may be implemented without departing from the broad inventive scope of the present invention.

[0013] FIG. 2 shows a flow diagram of exemplary steps in operating the voice-recognition control circuit 10. In one embodiment of the present invention, the toy or electrical device that utilizes the voice-recognition control circuit 10 is a toy dog. After power is applied to the toy dog, the toy dog is initialized and the audio receiver 12 is activated (Step 200). If no audible sound is detected ("No" at Step 202), the audio receiver 12 continues listening for audible sound (Step 202). At Step 202, if audible sound is detected ("Yes" at Step 202), the IC 16 determines if the detected audible sound matches a first predetermined sound signal (Step 204). If the detected audible sound does not match the first predetermined sound signal ("No" at Step 204), then the audio receiver 12 continues detecting for audible sound (Step 202).

[0014] At Step 204, if the detected audible sound matches the first predetermined sound signal ("Yes" at Step 204), then a counter value is incremented (Step 206). The IC 16 deter-
mines if the counter value equals a predetermined value (Step 208). If the counter value does not equal the predetermined value ("No" at Step 208), then a second predetermined sound is played (Step 210) and the audio receiver 12 continues listening for audible sound (Step 202). At Step 208, if the counter equals the predetermined number ("Yes" at Step 208), then a second predetermined sound is played (Step 212), the counter is reset (Step 214) and the audio receiver 12 continues listening for audible sound (Step 202).

[0015] A person of ordinary skill in the art will understand that the present invention may be utilized to identify traditional physical consumer products, such as toys, digital products, and/or with virtual products, such as avatars or other non-physical objects used in connection with online communities, online games, social media platforms, and the like. In a preferred embodiment of the present invention, the digital or virtual product will have a predetermined name associated with it; however, the predetermined name associated with the digital or virtual product will not be visible to the user. When a user speaks the predetermined name, the software application will cause the digital or virtual product to visibly react and/or play a predetermined sound, thereby letting the user know that the predetermined name is associated with that particular digital or virtual product.

[0016] Having thus described a preferred embodiment of a voice-recognition control circuit and a method for using the same, it should be apparent to those skilled in the art that certain advantages of the invention have been achieved. It should also be appreciated that various modifications, adaptations, and alternative embodiments thereof may be made within the scope and spirit of the present invention. The invention is further defined by the following claims.

What is claimed is:
1. A consumer product comprising:
an audio receiver for receiving audible sounds;
an audio output device for emitting audible sounds; and
an integrated circuit coupled to the audio receiver and audio output device, said integrated circuit configured to determine when a predetermined sound is detected, and when said predetermined sound is detected, said integrated circuit causes the audio output device to emit a second predetermined sound,
wherein information specifying the predetermined sound required to cause the audio output device to emit a second predetermined sound to is not visibly associated with the consumer product at point of sale.

2. The consumer product according to claim 1, further comprising:
a counter, wherein the counter counts each time the predetermined sound is detected, and after the predetermined sound is detected a predetermined number of times, the integrated circuit causes the audio output device to emit a third predetermined sound.

3. The consumer product according to claim 1, wherein the predetermined sound is a pronounced personal pronoun.

4. The consumer product according to claim 3, further comprising:
a counter, wherein the counter counts each time the pronounced personal pronoun is detected, and after the pronounced personal pronoun is detected a predetermined number of times, the integrated circuit causes the audio output device to emit a third predetermined sound.

5. A consumer product comprising:
labeling associated with the consumer product;
an audio receiver for receiving audible sounds;
an audio output device for emitting audible sounds; and
an integrated circuit coupled to the audio receiver and audio output device, said integrated circuit configured to determine when a predetermined sound is detected, and when said predetermined sound is detected, causing the integrated circuit to send a second predetermined sound to the audio output device,
wherein said labeling does not specify the predetermined sound required to cause the integrated circuit to send a second predetermined sound to the audio output device.

6. The consumer product according to claim 5, further comprising:
a counter, wherein the counter counts each time the predetermined sound is detected, and after the predetermined sound is detected a predetermined number of times, the integrated circuit causes the audio output device to emit a third predetermined sound.

7. The consumer product according to claim 5, wherein the predetermined sound is a pronounced personal pronoun.

8. The consumer product according to claim 5, further comprising:
a counter, wherein the counter counts each time the pronounced personal pronoun is detected, and after the pronounced personal pronoun is detected a predetermined number of times, the integrated circuit causes the audio output device to emit a third predetermined sound.

9. A method for identifying a consumer product, the method comprising:
detecting audible sounds;
determining when a predetermined sound is detected;
emitting a second predetermined sound from the consumer product when the predetermined sound is detected, and labeling the consumer product, wherein the labeling of the consumer product does not inform a user of the predetermined sound necessary to cause the consumer product to emit the second predetermined sound.

10. The method according to claim 9, wherein the predetermined sound is a pronounced personal pronoun.

11. The method of claim 9, further comprising:
counting the number of times the predetermined sound is detected; and
causing the consumer product emit a third predetermined sound after the predetermined sound is detected a predetermined number of times.

12. The method according to claim 11, wherein the predetermined sound is a pronounced personal pronoun.

13. A method for identifying a consumer product, the method comprising:
detecting audible sounds;
determining when a predetermined sound is detected;
emitting a second predetermined sound when the predetermined sound is detected, and
providing information to a user regarding the product, wherein the information provided does not inform the user of the predetermined sound required to cause the consumer product to emit the second predetermined sound.

14. The method according to claim 13, wherein the predetermined sound is a pronounced personal pronoun.
15. The method of claim 13, further comprising: counting the number of times the predetermined sound is detected; and emitting a third predetermined sound after the predetermined sound is detected a predetermined number of times.

16. The method according to claim 15, wherein the predetermined sound is a pronounced personal pronoun.