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TOY DISPLAYING MESSAGE

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a device displaying a message.

Description of Related Art

Letters, E-mails, facsimiles or the like have been known as means of exchange of messages between friends each other except voice.

However, depending on content of the messages, the letters are often too formal. Communication by the E-mails and facsimiles is required telephone lines, thus the means are large-scale and expensive. In the case of the letters, the letter is passed to one by hand or mail. However, there are problems that the former is conventional and lacks fun, while the latter takes time to put a stamp on a letter to mail. In the case of the E-mails and facsimiles, there are problems that the messages are generally transmitted from a house or a company, further, the messages are generally received in a house or a company.

SUMMARY OF THE INVENTION

The present invention was developed in view of the above-described problems. Therefore, an object of the present invention is to provide a toy displaying a message, which has fun and allows easy exchanges of messages.

In order to accomplish the above-described object, in one aspect of the present invention, a toy displaying a message comprises: a mode selecting section for selecting one of a message register mode and a message playback mode; a display section displaying registrable characters corresponding to a message in the message register mode, the characters being stored in a storage section, and the display section displaying characters as the message in the message playback mode, the characters corresponding to registered characters; and a character selecting section for selecting characters desired to be registered among the registrable characters displayed on the display section for registering the characters in the message register mode; wherein the message is displayed with scrolling on the display section and the toy has a size to be held by a single hand. In this description and claims, the words of "characters" includes the whole characters, such as letters, pattern marks, signs, symbols or the like which can be displayed. However, it is not required for the whole characters to be displayable with the toy displaying a message of the present invention. Only a part of them, for example, pattern marks may

be displayable.

According to the toy displaying a message, because the toy has the external size which can be held by a single hand, the toy is handy to carry. Thus, it is possible to input and exchange messages at any time and any place. If business of one's self is left as a message, it can be used as a memorandum.

The character selecting section can include a character registering section. The message playback mode can include a vibration playback mode, and the message can be displayed when the toy senses a vibration in the vibration playback mode.

According to the toy displaying a message, the message can be displayed when the toy senses the vibration. Thus, if the whole toy is made as an accessory and attached to a bag and the like, the message can be automatically displayed by a vibration with the bag.

The message playback mode can include a continuous playback mode, and the message can be repeatedly displayed in the continuous playback mode.

According to the toy displaying a message, because the message can be repeatedly displayed, the toy can be suitable for cases that one wishes to repeatedly see or convey the message.

With the toy displaying a message, when a specific character is selected, characters corresponding to the specific character can be displayed with animations.

According to the toy displaying a message, because the

animations constituted of the characters can be included among the displayed characters, a message having a fun can be made.

With the toy displaying a message, a display portion of the display section can comprise a large number of light emitting diodes being arranged like a matrix.

According to the toy displaying a message, because the display portion can be constituted of the light emitting diodes, it can be easy to see compared with the liquid crystal display.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description given hereinbelow and the accompanying drawings which are given by way of illustration only, and thus which are not intended as a definition of the limits of the present invention, and wherein:

FIG. 1 is a front view of a toy displaying a message according to an embodiment of the present invention;

FIG. 2 is a rear view of the toy displaying a message according to the embodiment of the present invention;

FIG. 3 is a circuit diagram of the toy displaying a message according to the embodiment of the present invention;

FIG. 4 is a block diagram of components of the toy displaying a message according to the embodiment of the present invention;

FIG. 5 is a view showing registrable characters of the toy displaying a message according to the embodiment of the present invention;

FIG. 6 is a view showing registrable characters of the toy displaying a message according to the embodiment of the present invention;

FIG. 7 is a view showing registrable characters of the toy displaying a message according to the embodiment of the present invention;

FIG. 8 is a view showing registrable characters of the toy displaying a message according to the embodiment of the present invention;

FIG. 9 is a view showing registrable characters of the toy displaying a message according to the embodiment of the present invention;

FIG. 10 is a view showing registrable characters of the toy displaying a message according to the embodiment of the present invention;

FIG. 11 is a view showing registrable characters of the toy displaying a message according to the embodiment of the present invention;

FIG. 12 is a view showing registrable characters of the toy displaying a message according to the embodiment of the present invention; and

FIG. 13 is a view showing registrable characters of the toy displaying a message according to the embodiment of the

present invention.

PREFERRED EMBODIMENT OF THE INVENTION

A toy displaying a message according to an embodiment of the present invention will be explained referring to FIGS. 1 to 13. FIG. 1 is the front view of a toy displaying a message 1 according to an embodiment of the present invention, and FIG. 2 is a rear view of the toy displaying a message 1. The toy displaying a message 1 is composed as an accessory having a chain. A body 2 of the toy displaying a message 1 has an external shape of a robot. On a left breast portion of the robot-shaped body 2, a display portion 3 having a shape of a lengthwise long rectangle is provided. The display portion 3 is constituted of light emitting diodes 4 arranged like a matrix (5 X 7, though it is not limited to this) as shown in FIG. 3. A right breast portion of the robot-shaped body 2 is provided with four buttons 5a, 5b, 5c and 5d. A rear surface of the body 2 is provided with a mode switch section 6 and a reset button 5e.

The toy displaying a message 1 has, as shown in FIGS. 3 and 4, switches 50a to 50e corresponding to the buttons 5a to 5e, respectively, a vibration switch 50f, a three mode switch 60 corresponding to the mode switch section 6, a semi-conductor integrated circuit (LSI) 7 and a LED drive circuit 8. The reference numeral 9 denotes a power supply switch.

The mode switch section 6 and the three mode switch 60 are for selecting one of a non-playback mode for playing back no message, a continuous playback mode (message playback mode) for continuously playing back a message by the scrolling display, and a vibration playback mode (message playback mode) for playing back the message when a vibration is sensed. By switching the mode switch section 6, the three mode switch 60 is switched to change the modes.

The button 5a and the switch 50a are for changing characters displayed on the display portion 3 one by one in backward order in a message register mode, while the button 5b and the switch 50b are for changing the characters displayed on the display portion 3 one by one in forward order in the message register mode. The forward order means an order of the character, for example, in FIGS. 5 to 13, from the left to the right and from the top to the bottom. By pressing the buttons 5a or 5b, the switches 50a or 50b are turned to be ON to change the character displayed on the display portion 3 to another character.

The button 5c and the switch 50c are for shifting the mode from the message playback mode to the message register mode. After shifting to the message register mode, they are for registering the characters desired to be registered. For shifting to the message register mode, the button 5c is pressed for two to three seconds. For registering the characters, the button 5c is pressed to turn the switch 50c ON.

The button 5d and the switch 50d are for deleting the character in the message register mode. The reset button 5e and the reset switch 50e are for deleting the whole message registered in the message register mode. By pressing the buttons 5d or 5e, the switches 50d or 50e are turned to be ON to delete the registered character or the whole message. The switches 50a to 50e are ON during the buttons 5a to 5e are pressed, while when the buttons 5a to 5e gets free of the pressed state, the switches 50a to 50e are turned to be OFF. That is, during the buttons are not pressed, the switches 50a to 50e are OFF.

The vibration switch 50f is for sensing a vibration. When the toy 1 is vibrated to cause the vibration switch 50f turn ON in the vibration playback mode, the message is displayed. After the message is displayed, the vibration switch 50f turns OFF.

The LSI 7 includes a storage section in which the characters are stored. The storage section has a memory location for registering characters as the message. The stored or registered characters are read out by the LSI 7 to be displayed. In the message register mode, the LSI 7 controls to display the characters stored in the storage section on the display portion 3 via the LED drive circuit 8 and to register the characters desired to be registered in the memory location in response to operations of the buttons 5a to 5c. The LSI 7 controls to delete the registered characters in response to operations of the buttons 5d and 5e. In the message playback mode, the LSI 7

controls to display the characters on the display portion 3, corresponding to the registered characters. The LED drive circuit 8 drives the light emitting diodes 4.

The types of the characters will be explained that are stored in the storage section of the semi-conductor integrated circuit 7 of the toy displaying a message 1. FIG. 5 shows capital letters of the alphabet, FIG. 6 shows figures, FIG. 7 shows pattern marks, signs and symbols, FIG. 8 shows *katakana* which is the Japanese syllabary, and FIGS. 9 and 10 show animations. In the message register mode, the characters shown in FIGS. 5 to 8 and the figures (1 to 4) shown on the left side in FIGS. 9 and 10 are normally displayed in this order one by one. The characters shown in FIGS. 5 to 10 are for the first stage.

In FIG. 7, the last mark among the pattern marks is a space mark. If the space mark is selected and registered, it is displayed as a space in the message playback mode. For the animations shown in FIGS. 9 and 10, the figures (1 to 4) on the left side in FIGS. 9 and 10 are displayed with blinking, and when selected and registered, the animations on the right side thereof are displayed in the message playback mode.

FIGS. 11 to 13 show characters for the second stage including levels 1 to 3. FIG. 11 shows small letters of alphabet corresponding to the level 1, FIG. 12 shows constellation symbols corresponding to the level 2, and FIG. 13 shows animations corresponding to the level 3.

In the level 3, if the pattern marks on the left side in FIG. 13 are selected among the pattern marks in FIG. 7 to be registered, the animations on the right side of the pattern marks in FIG. 13 are displayed in the message playback mode.

Next, the way to play by using the toy displaying a message 1 will be explained.

Making of a message:

The mode switch section 6 is set to the message playback mode. In this state, after the button 5c is continuously pressed for two to three seconds, it is shifted to the message register mode. Then, a letter "A" of the alphabet is displayed on the display portion 3 with blinking. When the user wants to register the letter "A" of the alphabet as the first letter of a message, the user presses the button 5c in this state. Then, the first character of the message is registered and determined "A". When the user wants to register another character as the first character of the message, the user keeps pressing the buttons 5b or 5a till the desired character is displayed on the display portion 3 or presses repeatedly the buttons 5a or 5b. When the button 5b is pressed, the characters blink one by one in order of the characters shown in FIGS. 5 to 10, while when the button 5a is pressed, the characters blink in the reverse order which is reverse of the order of the characters displayed when the button 5b is pressed. Then, when the desired character

is displayed on the display portion 3 with blinking, the user presses the button 5c. Thereby the first character of the message is determined.

By the same operation, the following characters are registered one after another to make the message. The characters can be registered up to 30. Lastly, by the buttons 5b or 5a, the letters "OK" stored beforehand in the storage section are made to be displayed with lighting up on the display portion 3. Then, by pressing the button 5c, the content of the message is determined. When the content of the message is determined, the input content of the message is displayed once for confirmation and it is shifted to the message playback mode.

Correction of a message:

(1) Correction during register

When the user notices that the characters are input by mistake during the register for the characters, the user presses the button 5d. Every time the button 5d is pressed, the characters are deleted one by one from the last registered character toward the first registered character. In this manner, the characters are deleted till the character input by mistake is deleted, thereafter correct characters are input through the selections of the characters by the buttons 5b or 5a and through the registers of the characters by the button 5c. Lastly, by the buttons 5b or 5a, the letters "OK" stored beforehand in the storage section are made to be displayed with

lighting up on the display portion 3. Then, by pressing the button 5c, the content of the message is determined.

(2) Correction after register

When the button 5c is continuously pressed for two to three seconds, the last registered character is displayed on the display portion 3. At this time, the user presses the button 5d. Then, every time the button 5d is pressed, the characters are deleted one by one from the last registered character toward the first registered character in order. In this manner, the characters are deleted till the character input by mistake is deleted, thereafter correct characters are input through the selections of the characters by the buttons 5b or 5a and through the registers of the characters by the button 5c. Lastly, by the buttons 5b or 5a, the letters "OK" stored beforehand in the storage section are made to be displayed with lighting up on the display portion 3. Then, by pressing the button 5c, the content of the message is determined.

Deleting of all content of a message:

For deleting all content of the message, the user presses the reset button 5e in the message register mode.

Playback of a message:

For playing back the message, there are two types of manners. With one manner, the mode switch section 6 is shifted to the continuous playback mode which is also called a

demonstration mode. In this case, the registered message is repeatedly played back by being displayed with scrolling on the display portion 3. With the other manner, the mode switch section 6 is shifted to the vibration playback mode. In this case, every time the body 2 is vibrated, the message is played back once. If the vibration is given to the body 2 during the message is played back, there is no influence to the playback.

Shift to the second stage:

The second stage includes levels 1 to 3. It is not possible to shift to the level 2 except through the level 1. It is not possible to shift to the level 3 except through the level 2. The levels 1 to 3 are entirely reset when the reset button 5e is pressed in the message register mode, then it is shifted to the state that only the characters for the first stage can be selected.

(1) Level 1

When the mark and letters "◇ (diamond) RED" are input in the message register mode by the same operation as that for registering the characters, not only the characters for the first stage but also the characters for the level 1 of the second stage can be selected.

(2) Level 2

On condition that it is shifted to the level 1, when the mark and letters "◇ (diamond) BLUE" are input in the message register mode by the same operation as that for registering the

characters, not only the characters for the first stage but also the characters for the levels 1 and 2 of the second stage can be selected.

(3) Level 3

On condition that it is shifted to the level 2, when the mark and letters "◇ (diamond) YELLOW" are input in the message register mode by the same operation as that for registering the characters, not only the characters for the first stage but also the characters for the levels 1 and 2 of the second stage can be selected. Further, if the pattern marks in the left side of FIG. 13 are selected among the pattern marks shown in FIG. 7 to be registered, the animations in the right side of the pattern marks in FIG. 13 are displayed in the message playback mode.

The present invention is not limited to the above-described embodiment. Obviously, many modifications and variations of the present invention in light of the above teaching may be made. It is, therefore, to be understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically described. For example, a sound or voice corresponding to the message may be output.

According to the representative advantage of the invention, the toy displaying a message has: a mode selecting section for selecting one of a message register mode and a

message playback mode; a display section displaying registrable characters corresponding to a message in the message register mode, the characters being stored in a storage section, and the display section displaying characters as the message in the message playback mode, the characters corresponding to registered characters; and a character selecting section for selecting characters desired to be registered among the registrable characters displayed on the display section for registering the characters in the message register mode; wherein the message is displayed with scrolling on the display section and the toy has a size to be held by a single hand, so that the toy is handy to carry. Thus, it is possible to input and exchange messages at any time and any place. If business of one's self is left as a message, it can be used as a memorandum.

The entire disclosure of Japanese Patent Application No. 11-29282 filed on February 5, 1999 including specification, claims, drawings and summary are incorporated herein by reference in its entirety.



What is claimed is:

1. A toy displaying a message comprising:

a mode selecting section for selecting one of a message register mode and a message playback mode;

a display section displaying registrable characters corresponding to a message in the message register mode, the characters being stored in a storage section, and the display section displaying characters as the message in the message playback mode, the characters corresponding to registered characters; and

a character selecting section for selecting characters desired to be registered among the registrable characters displayed on the display section for registering the characters in the message register mode;

wherein the message is displayed with scrolling on the display section and the toy has a size to be held by a single hand.

2. The toy displaying a message as claimed in claim 1, wherein the message playback mode includes a vibration playback mode, and the message is displayed when the toy senses a vibration in the vibration playback mode.

3. The toy displaying a message as claimed in claim 1, wherein the message playback mode includes a continuous playback mode, and the message is repeatedly displayed in the



continuous playback mode.

4. The toy displaying a message as claimed in claim 1, wherein when a specific character is selected, characters corresponding to the specific character are displayed with animations.

5. The toy displaying a message as claimed in claim 1, wherein a display portion of the display section comprises a large number of light emitting diodes being arranged like a matrix.

6. The toy displaying a message as claimed in claim 1, wherein the character selecting section includes a character registering section.

7. A toy displaying a message comprising:
mode selecting means for selecting one of a message register mode and a message playback mode;
storage means for storing characters;
display means for displaying character in the message register mode, the characters being stored in the storage means, and displaying registered characters with scrolling as a message in the message playback mode; and
character registering means for registering a character among the stored characters displayed by the display means to



make the message in the message register mode.

8. The toy displaying a message as claimed in claim 7, further comprising mode switching means for switching the message playback mode between a vibration playback mode and a continuous playback mode, the vibration playback mode being for displaying the message when a vibration is sensed, and the continuous playback mode being for continuously displaying the message.

9. A toy displaying a message comprising:

a mode selecting section for selecting one of a message register mode and a message playback mode;

a control section for controlling a register and display for a message;

a display section displaying registrable characters stored in a storage section in the message register mode, the display section displaying characters corresponding to registered characters as the message in the message playback mode, and the display section comprising a large number of light emitting diodes being arranged in a matrix;

a character selecting section for selecting characters desired to be registered among the registrable characters displayed on the display section for registering the characters in the message register mode;

a character registering section for registering selected



characters;

a vibration sensing section sensing a vibration of the toy; and

a mode switching section for switching the message playback mode between a vibration playback mode and a continuous playback mode, the vibration playback mode being for displaying the message when the vibration is sensed by the vibration sensing section, and the continuous playback mode being for continuously displaying the message on the display section;

wherein when a specific character is registered, characters corresponding to the specific character are displayed with animations, the message is displayed with scrolling on the display section, and the toy has a size to be held by a single hand.