

Nov. 15, 1966

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SPEECH AND SOUND REPRODUCING DEVICE IN
DOLLS, FIGURES AND OTHER OBJECTS
Filed Nov. 25, 1964

3,285,609

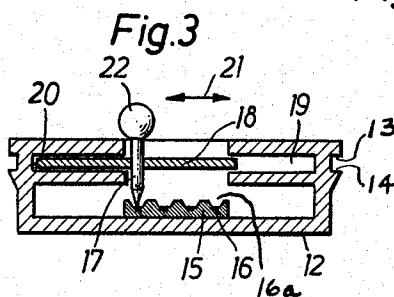
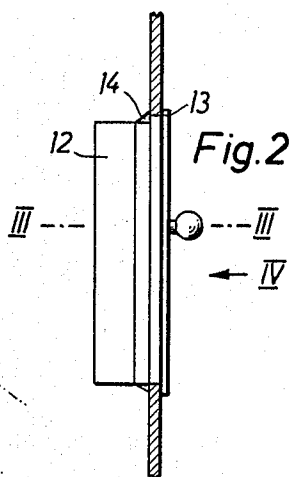
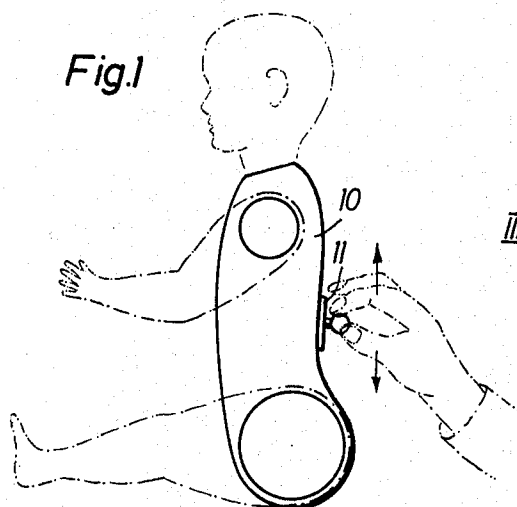


Fig. 4

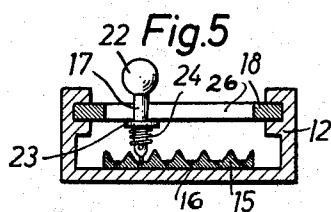
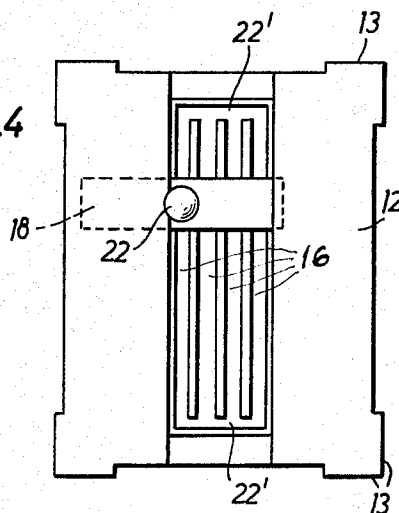


Fig. 7

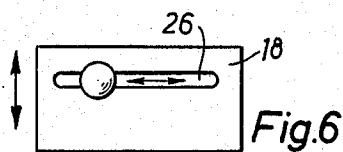
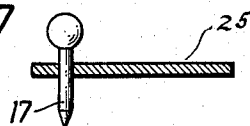
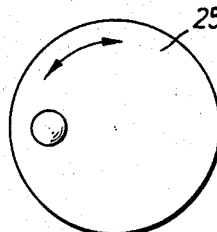


Fig. 8



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**SPEECH AND SOUND REPRODUCING DEVICE IN
DOLLS, FIGURES AND OTHER OBJECTS**
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Filed Nov. 25, 1964, Ser. No. 414,025
Claims priority, application Germany, Dec. 6, 1963,
H 51,059
7 Claims. (Cl. 274—1)

The present invention relates to a speech or sound reproducing device for dolls, imitations of animals, advertising boxes or novelties, savings banks or like other figures and articles. Prior speech and sound reproducing devices are comparatively expensive in fabrication because many mechanically moved parts are necessary for their function; and therefore they are also subject therefore to rapid wear.

The present invention proceeds from the problem of manufacturing a speech and sound reproducing device which is very simple in construction and, has a long life. For the solution of this problem, in such a device, for dolls, figures, and other articles having a sound record in grooves whereof a sound pick-up is guided, in accordance with the invention it is proposed that the stationary sound record, preferably as a flat body with straight running sound grooves cut or impressed therein, be disposed in a housing which is inset in an aperture of and is secured to the article; the sound pick-up stylus being secured on a slide provided with an outwardly extending hand grip and displaceably disposed as a cover on the housing, whereby the pick-up is guided in the sound grooves and directly moved by hand.

The proposal in accordance with the invention, to obviate completely mechanically moved parts and drives and obtain sound reproduction through a sound pick-up stylus moved and also in part guided by hand, represents a solution which is very inexpensive in fabrication and of a higher life expectancy in use.

The sound carrier or record in accordance with a further feature of the invention is fixed to the bottom of the housing and provided with deeply cut, and preferably several, straight and parallel extending sound grooves, which are joined one to another through reversing connecting grooves, so that with forward and backward movement or turning in both directions the sound pick-up remains in engagement and the sound pick-up stylus-carrying cover is guided in slots.

The slots for guiding the cover on which the sound pick-up stylus is disposed, in accordance with a further feature of the invention, have such a depth that the cover in addition to its displacement or sliding longitudinally of the sound grooves is also displaceable transversely thereto, enabling a switching over or transfer of the stylus from one groove to another.

Another proposal in accordance with the invention is that the cover be supported in guide slots displaceably essentially only lengthwise of the sound grooves and be provided with a slot extending transversely to the displacement direction, in which in turn is displaceable the sound pick-up stylus with the outwardly extending hand grip.

In accordance with yet another feature of the invention the cover can be fabricated as a circular disc with the sound pick-up stylus eccentrically disposed thereon.

The invention is more fully explained with respect to some detailed examples shown in the drawings. It is however, not limited to the embodiments there represented, but rather there are possible further modifications in the field of the invention.

In the drawing:

FIG. 1 is a side view of the torso of a doll incorporating a device embodying the invention;

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FIG. 2 is a section through the wall forming the back of the doll, with the speech and sound reproducing device set therein;

FIG. 3 is a section through the device of FIG. 2 taken along the line III—III;

FIG. 4 is a side view taken as indicated by the arrow IV in FIG. 2;

FIG. 5 is a view similar to FIG. 3 for a modified construction;

FIG. 6 is a top plan view of the slide represented in FIG. 5;

FIG. 7 shows a modified slide; and

FIG. 8 is a top plan view of the slide of FIG. 7.

In FIG. 1 a speech and sound reproducing device 11 is inset in the back of the doll torso 10, for which purpose the back of the doll is apertured to receive the housing 12. On its periphery the housing 12 has flat surface portions 13 bearing against the external wall of the back of the doll, and further opposed surfaces 14 with sloped or wedge-shaped starting surfaces so that upon insertion of the housing 12 into the aperture, an automatic anchoring of the housing 12 is obtained in the back of the doll. Other types of fastening are also possible.

On the bottom of the housing 12 there is disposed a record or sound carrier 15, which can be comprised of a thin plate and is provided with sound grooves 16, cut relatively deep therein, whereby the sound pick-up 17 secured in a slide 18 is also guided in the sound grooves; while the slide 18 is guided in opposed facing parallel slots 19 and 20 on opposite sides of an elongated opening of the housing 12. The depth of these slots in FIG. 3 is so dimensioned that, in addition to its displacement lengthwise of the sound reproduction grooves 16, the slide 18 can likewise be slid transversely thereto in the direction indicated by the arrow 21, and thereby the sound pick-up stylus can also switch into adjacent parallel extending sound grooves.

The sound pick-up has a point and the slide plate 18 is constructed as a sound box, so that a sound playback is obtained through movement of the sound pick-up 17 in the groove 16, achieved by manually grasping and moving the knob 22 disposed on the sound pick-up stylus.

In FIG. 3 only four adjacent parallel sound grooves are shown, but there can be several, ten, for example. The sound grooves need not be cut so deeply as represented in FIG. 3. Also the guiding channels 16a, in the bottom surfaces of which the actual sound reproduction grooves are located are not necessary in every case, but are, however, advantageous for improved sound pick-up guidance. Also merely a single sound reproduction groove may be present.

FIG. 4 shows that the sound reproduction grooves with the associated guide channels open at their ends into the turning or switching grooves 22'; and in the embodiment of FIG. 4, these latter grooves 22' extend transversely to and across all the sound grooves. It is also feasible at times to connect two sound grooves by an arcuate switching groove and to cut two adjacent sound grooves in opposite directions, so that the one sound groove with contact in one direction and the adjacent sound groove with contact in the other direction reproduces the sound. Also in a group of sound grooves there may be included a groove without a recording, that is a free-running groove from which the stylus obtains no sound. It is also possible to obviate the shunt-like switching grooves, inasmuch as the sound pick-up stylus is lifted a slight degree, advantageously against the pressure of a spring, and then displaced sideways to engage in the adjacent sound reproduction groove.

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FIG. 5 again shows a housing 12 with a sound record 15 arranged along its bottom, wherein, by the manually grasped knob 22, the slide with the sound pick-up stylus is displaceable only in a directional longitudinal of the sound reproduction grooves, and the sound pick-up stylus is displaceable transversely thereto in a guide slot 26 formed in the slide plate 18. To prevent lifting the sound pick-up stylus 17 out of the guide slot 26, a radially extending flange or disc 23 is provided thereon; and further, there is a helical spring 24 surrounding the sound pick-up stylus to urge the stylus point into the sound grooves with constant pressure. With this arrangement, for a given size housing the elongated opening in the housing traversed by the slide may be wider and hence a record plate with a larger number of sound grooves may be used, since slots 19, 20 need not be as deep as is required to accommodate a laterally shiftable slide.

FIG. 7 shows the sound pick-up stylus 17 eccentrically disposed on a circular disc 25, which is guided in the slots 19 and 20 in manner like to that of the previously described slide 18. Through turning of the disc there can result a displacement of the sound pick-up stylus transversely to the sound grooves for changing from one sound groove to the other.

With a sound groove length of about 4 or 5 cm. drawing the pick-up in one groove produces, for example the sound "Papa," while in the adjacent groove of equal length the sound "Mama" is obtained. Where there are two sound grooves, they are advantageously cut oppositely, so that upon drawing the pick-up, for example, from bottom to top in one sound groove, one word is sounded, and upon drawing it in the adjacent groove from top to bottom, likewise one, and preferably a different, word is sounded. The opposite cutting of adjacent grooves is also particularly advantageous where more than two sound grooves are used.

With a sound groove length of about 8 to 10 cm. entire sentences can be produced, thus for example, "I love you."

I claim:

1. For dolls, figures and other articles such as advertising boxes and savings banks, a speech and sound reproducing device having a sound record and a sound pick-up stylus guided in grooves of said record, said device comprising: a housing inset in an opening of and secured to the article; a stationary elongated record secured on the bottom of and within said housing and having a plurality of straight grooves thereon extending longitudinally of said record and parallel to each other and to said bottom; at least some of said grooves being sound grooves having

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respective sound tracks therein; a said stylus; a slide carrying said stylus and shiftable mounted and guided in parallel slots at the top of the housing for movement parallel to said bottom; the mounting of said stylus on the housing through said slide affording stylus displaceability both longitudinally and transversely of said record; the ends of adjacent said grooves interconnected through switching grooves; an outwardly extending hand grip connected to the slide; whereby said sound pick-up stylus is movable by hand while guided and remaining in engagement in the said grooves with forward, switching and backward stylus movement for sound production at said sound grooves.

2. A device in accordance with claim 1, wherein said parallel slots are a pair of slots opening toward each other to receive opposite end portions of said slide, said slots extending parallel to said sound grooves; said slots being of such depth that said slide in addition to displaceability longitudinally to the sound grooves is also displaceable transversely thereto.

3. A device in accordance with claim 1, wherein said slide is supported in the guide slots essentially displaceably only longitudinally to the sound grooves and has a slot extending transversely to the displacement direction; said sound pick-up stylus slideably displaceable in the last said slot; said hand grip being provided on said stylus and thereby connected to the slide.

4. A device in accordance with claim 1, wherein the slide comprises a circular disc shiftable rotationally in, as well as longitudinally along, said slots with said sound pick-up stylus eccentrically disposed thereon.

5. A device in accordance with claim 1, wherein adjacent grooves are oppositely cut, and each sound groove produces at least an entire word.

6. A device in accordance with claim 1, wherein two adjacent sound grooves are connected group-wise at their ends through a reversing curve, with the so-connected grooves oppositely cut.

7. A device in accordance with claim 1, wherein one groove in a sound groove group is formed as a free running groove without sound reproductions.

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