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B. SEGAL ET AL
EDUCATIONAL TALKING TOY

2,579,872

Filed April 26, 1946

2 SHEETS—SHEET 1

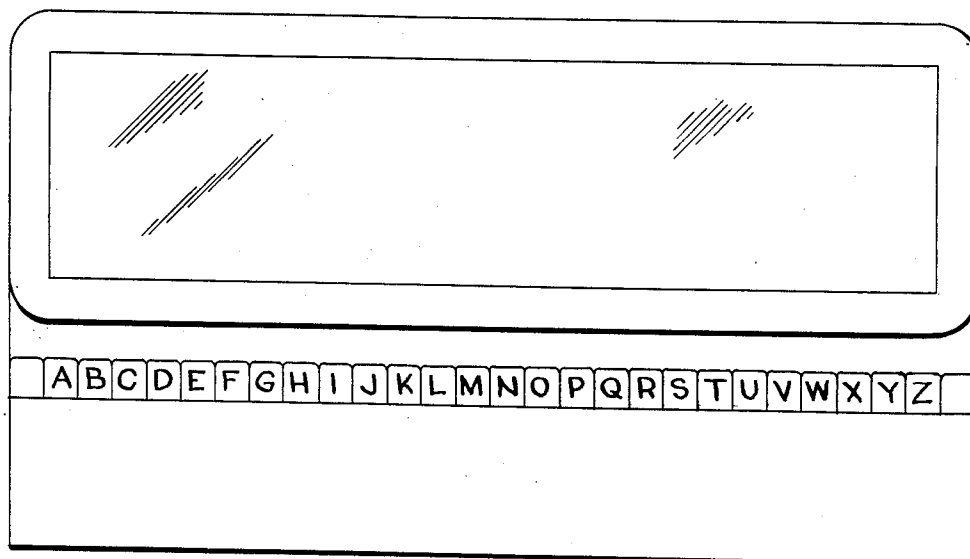
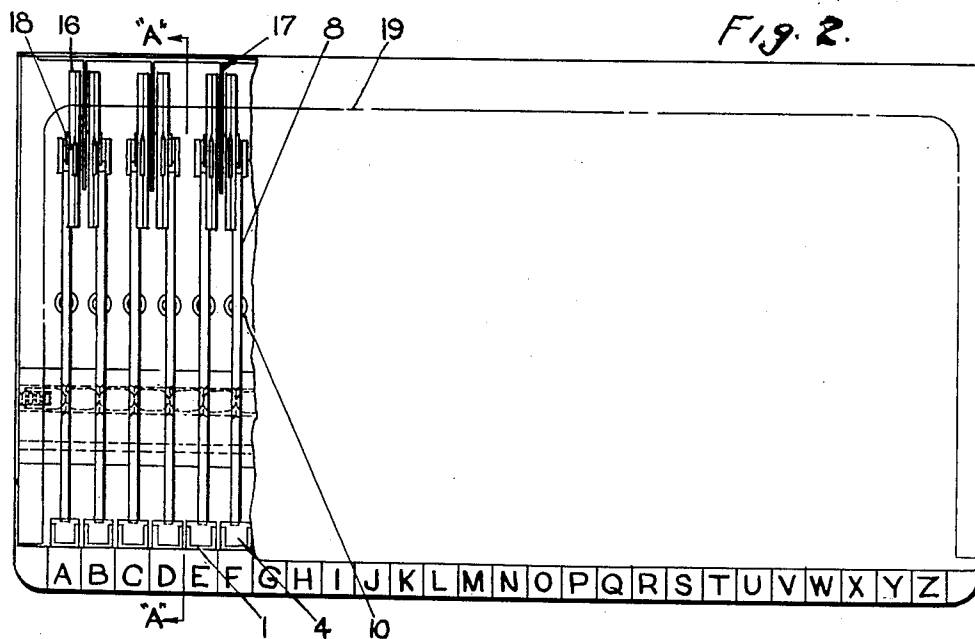


Fig. 1.

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2 SHEETS—SHEET 2

Fig. 4.

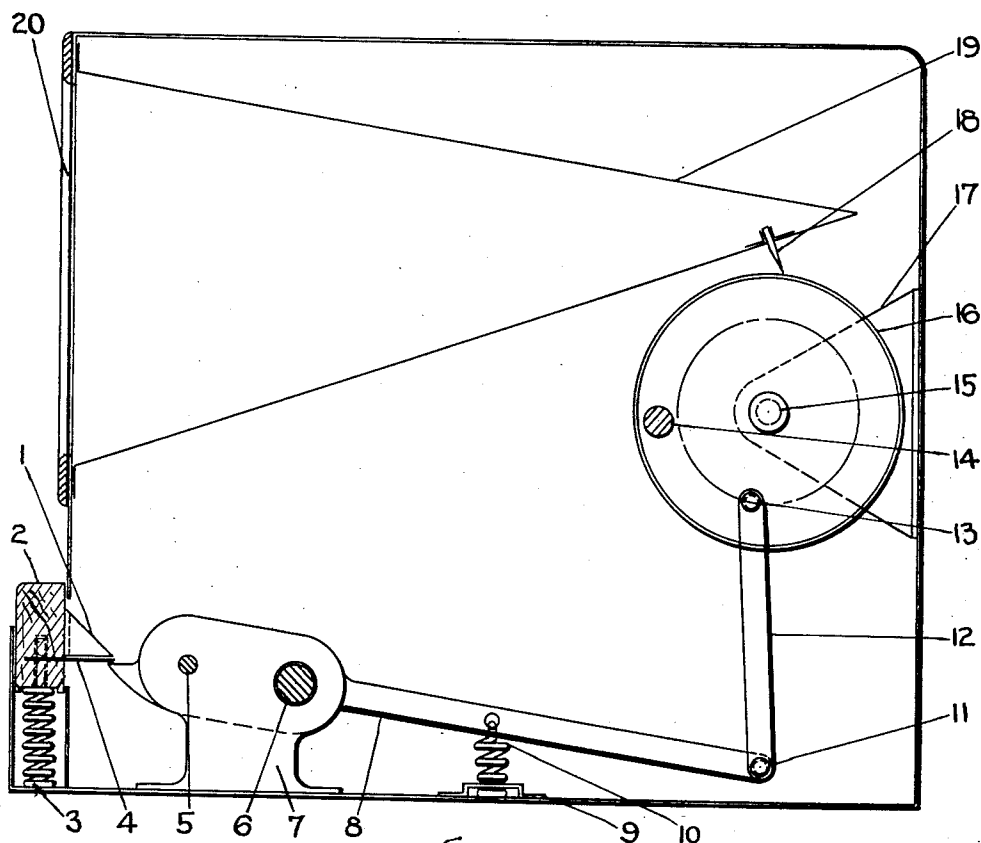
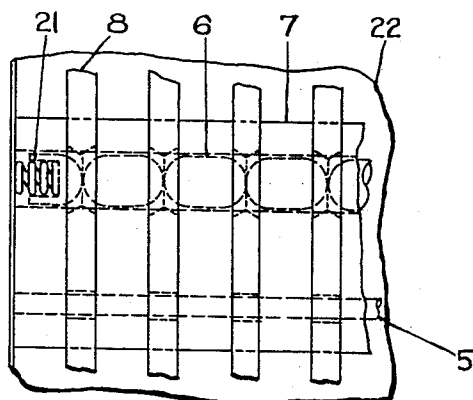


Fig. 3.

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UNITED STATES PATENT OFFICE

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EDUCATIONAL TALKING TOY

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3 Claims. (Cl. 274—1)

1

The present invention relates to educational toys and particularly to the type employing a keyboard.

An object of this invention is to provide a toy of the character mentioned, of novel and improved construction, adapted for teaching an alphabet, a system of numerals, musical and spoken sounds or passages, bird and animal calls and other similar subject matter for both education and entertainment.

A further object of the present invention is to provide a novel and improved toy of the kind set forth, which is easy and fascinating to use, reasonably cheap to manufacture, simple in construction, positive in action and efficient in carrying out the purposes for which it is designed.

Other objects and advantages will become apparent as this disclosure proceeds.

In the accompanying drawings forming part of this specification, similar characters of reference indicate corresponding parts in all the views.

Fig. 1 is a front view of a device embodying the teachings of this invention.

Fig. 2 is a top view thereof, shown partly in section.

Fig. 3 is a section taken at line A—A in Fig. 2.

Fig. 4 is an enlarged fragmentary view of the region substantially within the circular area shown in Fig. 2.

In the drawings, in a suitable casing designated generally by the numeral 22, between successive brackets of the spaced series of brackets 7, are positioned the levers 8, formed with a forward trip nose. These levers intermediate their respective ends, are each pivotally mounted on an axis rod 5, positioned horizontally through said brackets 7. Said levers 8, are in tandem relation and each at their forward ends are associated with the respective keys 2, by means of the trip blade spring 4, normally resting on said nose end of said respective levers 8. The keys 2, are slidably mounted at the front of the casing 22, for movement vertically, which when downward, is against the action of the respective compression springs 3. At rest position, the forward ends of levers 8, due to the dimension of the respective tension springs 10, and all of the keys 2, due to action of the springs 3, are upward. The numeral 1 indicates an element, one of which is carried on each key 2, to limit upward movement of said blade springs 4 respectively.

A plurality of links 12 are provided, which are pivotally joined at their lower ends respectively, to the inward ends of the respective levers 8, by

2

pin 11, one for each, while the upper ends of said links 12 are respectively pivotally joined to the respective discs or cylinders 16, at 13, which individual axis pins 13, at rest position of the device, as shown in Fig. 3, are to the left of the vertical with respect to the axis of rotation 15 of the several cylinders 16, whereby upon downward movement of any of the keys 2, its associated cylinder 16, will rotate clockwise. The axes 15 are provided by means of pins in alignment through the brackets 17, extending from the casing 22. Each cylinder 16, in the embodiment shown, carries a sound track thereon in such suitable position and along such path thereon as to be in constant contact respectively with the respective styli 18 during rotation of said cylinders. Though not specifically illustrated, such sound tracks are circumferentially on the periphery of the respective cylinders 16. Such position of sound tracks being convenient in the structure shown, but not mandatory.

The series of styli 18 are mounted in spaced relation and suitably carried on what may be termed a speaker member 19. Such speaker may be formed of cardboard or other suitable sheet material, which sheet may be folded to form a V-channel and positioned as illustrated, whereby its free edges are mounted along the edges of a front opening in the casing 22, which opening may have spanned thereacross, speaker baffle cloth 20, or other screening sheet material or grill. Said sheet member is free to vibrate.

The top, and if desired, also the front surfaces of the keys 2, are marked with designations or carry insignia, as for instance the letters of an alphabet. In such instance, the record cylinders 16 will carry appropriate sound tracks which, when travelled over by the respective styli, will issue forth sounds of said letters which the respective keys indicate. Of course, but one key 2 is pressed down, or "played," at a time, and the sound track played will bear some relation to the indicia carried on the particular key operated. As a further example, the keys 2 may carry the respective names of the notes of a musical scale, in which embodiment the associated sound tracks will be of the respective musical sound and if desired may include the names of such notes. Other adaptations are of course obvious, and the manner of operation is obvious from the above description and therefore needs no further detail. It is to be noted that the springs 3 and 10 are adapted to return any moved components to initial rest position, and that holding any key 2 in its lowered position, will in no

manner affect the automatic operation of the associated lever 8, after the trip blade spring 4 is out of engagement with the nose at the forward end of such lever.

When the levers 8 and links 12 are properly proportioned as to their dimensions, particularly as to the lengths between axes 5 and 11, 11 and 13, also 13 and 15, as well as the scope of travel of the keys 2, any cylinder 16 will rotate a half turn upon completion of the full downward movement of a key 2, and continue automatically in like direction another half turn to initial rest position to the starting point on the track, upon release of the lever 8 from its key 2. Such is aided by action of the stressed spring 10, the momentum of the rotating cylinder 16 and further by weight 14 carried in the body of each of the respective cylinders 16.

If desired the embodiment illustrated may also include means to permit but one of the keys 2 to be operated at a time. For such purpose, a series of locking pins 6 are provided, one such locking pin being slidably mounted laterally through each of the brackets 7, and extending from such respective brackets into conical sockets in the levers 8. All said pins 6 are in alignment, parallel and spaced relation with respect to axis rod 5. Said sockets are in opposite faces of each of the levers 8, and are communicative as to each of said levers by an opening sufficient to admit a pin 6 therethrough when said pins are shifted laterally of the levers 8, meaning along the line of said locking pins 6.

When none of the keys 2 are being operated, all of the locking pins 6 are in end to end contact within the communicative sockets in the respective levers 8; the ends of said pins being shaped as the half sphere, to be acted upon cam-like upon downward movement of a key 2, by the particular socket walls in the lever 8 actuated, whereby a pair of successive pins 6 within the sockets of such moved lever 8, will become separated, thereby causing movement towards one of the side walls of the casing 22, to that side of the lever 8 moved, and movement in the opposite of all the other locking pins 6, whereby one pin 6 will lie through each of the unmoved levers 8, locking same to the brackets 7 respectively.

It is to be noted that the terminal pins of the series 6, each houses within a socket therein, a compression coil spring 21, the outward ends of which springs rest against the respective side walls of the casing 22. Dimensions are such, that when all keys 2 are upward, each of the socketed end pins 6 are spaced from the respective end walls of casing 22, one half of the horizontal thickness of a lever 8; all levers 8 being identical in thickness at the locking pin region. Such construction permits free movement of but a single lever 8 at any one time, because the possible gap in the series of locking pins 6 does not exceed the horizontal thickness of one lever 8, except for small tolerance.

In the illustrated embodiment, all intermediate locking pins 6 are identical, and so are all brackets 7 intermediate the levers 8, all identical. The assembled device is symmetrical with respect to the center line between the side walls of the casing 22, when the keys 2 are in normal rest position. Upon downward movement of a particular key 2, the resulting shifting of the locking elements 6 due to the cam action as explained, will distort such symmetry, cause stressing of the end springs 21 and accomplish the locking of all the unmoved levers 8, for a locking pin 6 will now be

positioned substantially through each of said unmoved levers.

Now upon release of said particular pressed down key 2, its associated lever 8, upon return to initial rest position, will permit re-entrance of the separated pins 6 which will come again into contact with each other within the sockets of said moved lever, whereby the stressed springs 21, will restore initial condition so that any of the keys 2 thereafter selected may be manipulated, of course, but one at a time.

It is particularly desired to note that when the contrivance is so designed that the cylinders 16 shall make a complete revolution as a single cycle of operation, there occurs no run of a stylus 18 for reverse operation of the sound track it is associated with, because no track ever travels in reverse in such structure. Unintelligible sounds are therefore eliminated, because they just do not happen.

This invention is capable of numerous forms and various applications without departing from the essential features herein disclosed. It is therefore intended and desired that the embodiment shown herein be deemed illustrative and not restrictive and that the patent shall cover all patentable novelty herein set forth; reference being had to the following claims rather than to the specific description herein to indicate the scope of this invention.

We claim:

1. In an educational toy of the character described, in combination with a frame, a cylinder having a sound track thereon, rotatably mounted on the frame, a member formed of sheet material mounted on the frame whereby said sheet member is free to vibrate, a stylus carried on said sheet member and extending therefrom in engagement with the sound track, a key moveably mounted on the frame, a swingably mounted lever, pivotally mounted intermediate its ends on the frame, whereby one end of said lever is adapted to be moved by the key upon manual movement of said key, a link pivotally mounted at its ends to the other end of the lever and to the cylinder at a point spaced from the axis of rotation of said cylinder and spring means to maintain said lever at a predetermined rest position; in such rest position, the line joining the pivotal connections of the link, being spaced from the axis of rotation of the cylinder, whereby upon manual movement of the key, the sheet member will be caused to vibrate due to the resulting rotation of the cylinder, thereby producing sound.

2. A device as defined in claim 1, including a spring means adapted to maintain the key at a predetermined rest position and including trip means comprising disengageable elements carried respectively on said key and lever, whereby said lever is released from the key upon movement of said key a predetermined distance from rest position whereupon said elements disengage, whereby said lever is adapted to automatically return to rest position; said trip means being adapted to re-engage the key with the lever upon return of the key and the lever to rest position.

3. In an educational toy of the character described, in combination with a frame, a plurality of cylinders, each having a sound track thereon and rotatably mounted on the frame, a member formed of sheet material mounted on the frame whereby said sheet member is free to vibrate, a plurality of styli carried on said sheet member in spaced relation and extending therefrom respectively in engagement with the respective

5

sound tracks, a plurality of keys moveably mounted on the frame and a plurality of means carried on the frame, associated respectively with the respective keys and cylinders, each such means being adapted to rotate one of the cylinders upon manual movement of one of the keys, whereby said sheet member will be caused to vibrate thereby producing sound determined by the sound track on the cylinder rotated.

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