

(12) INNOVATION PATENT
(19) AUSTRALIAN PATENT OFFICE

(11) Application No. **AU 2017100226 A4**

(54) Title
BRILLE SLATE TO TEACH CHILDREN WITH VISUAL DISABILITIES

(51) International Patent Classification(s)
G09B 5/04 (2006.01)

(21) Application No: **2017100226** (22) Date of Filing: **2017.02.27**

(45) Publication Date: **2017.04.06**

(45) Publication Journal Date: **2017.04.06**

(45) Granted Journal Date: **2017.04.06**

(71) Applicant(s)
Utkal MEHTA

(72) Inventor(s)
Singh, Nikhil;Prakash, Vinaal;Koroi, Monika;MEHTA, Utkal

(74) Agent / Attorney
Utkal MEHTA, 81 Nemies Rd, Runcorn, QLD, 4113, AU

New Abstract:

A portable electronic gadget, namely educational slate, a portable, easily adoptable device which would provide basic Braille education to the visually impaired children. Further, visually impaired can easily utilize the device with little or no supervision from trained personnel adding it to self-sufficiency of the present invention.

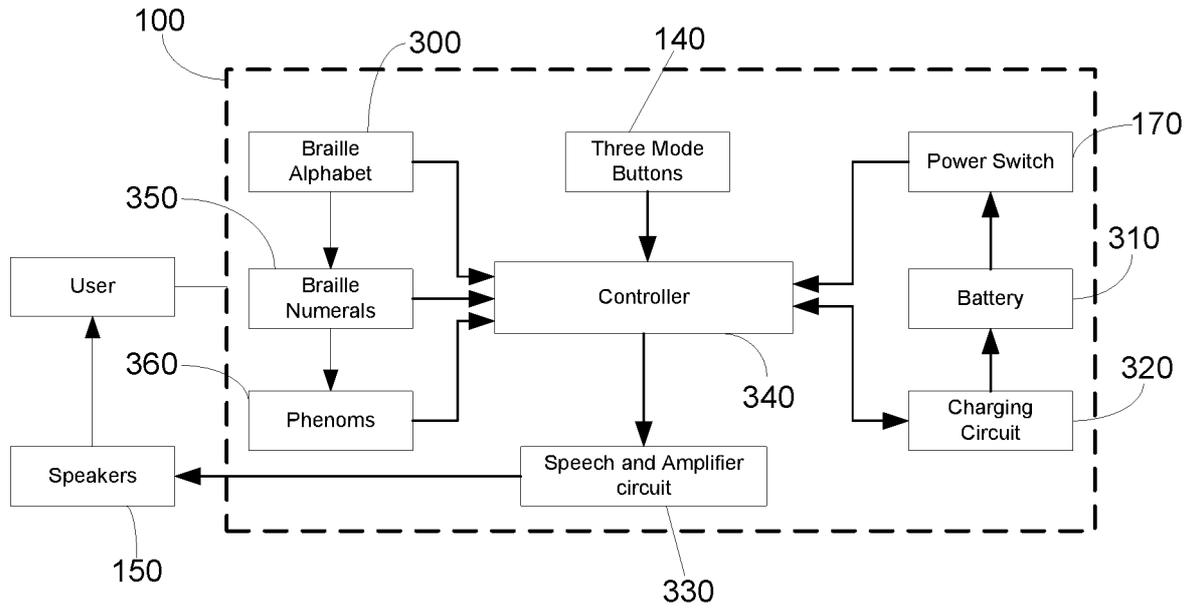


Figure 3

BRaille SLATE TO TEACH CHILDREN WITH VISUAL DISABILITIES

1. TECHNICAL FIELD

[01] The invention generally covers the design and develops of an educational device to teach basic Braille characters such as numerals and alphabets to visually impaired children. The slate contains audible voice output upon button press, volume control, and smart battery status monitor for charging and battery voltage through auditory means. Furthermore, 26 Braille keys serve for both alphabets and numeric facilitated with three Braille mode buttons. The device enables the user to remember Braille letters easily and independently.

2. BACKGROUND ART

[02] Till current date there has not been any device implemented similar to slate with a primary purpose to teach Braille characters and numeric to the blind children through audible means. However there are arts invented such Perkin's Braille machine that fulfils the purpose of imparting Braille knowledge to the children. It is apparent that the costs of these devices are too high that a common visually impaired people cannot afford them. In addition, the kind of previous art is difficult to handle due to its weight, size, structure and the features available on the design. Moreover, the purpose of available designs slightly deviates as it requires the children to first learn the Braille machine then use those input keys to make combinations for Braille characters. Previous art could only be owned by institutions due to the costs associated and also trained personnel should be available to provide guidance and support to the user. Therefore, due to the primary reasons of cost, method, size and in particular the method of Braille typing with limited input of keys, the previous art presents many setback in the learning and teaching Braille in general for young blind children. As stated by the National federation of the Blind, 90% of the blind children are not taught to read and write Braille and with this amount of illiterate children they might grow up to be about 50% of ungraduated students from the high school while 70% would be unemployed. One more issue has been reported that there are not enough numbers of teachers for Braille in assisting each individual blind child in how to read and write Braille.

[03] The present proposed invention satisfies the primary purpose of teaching basic Braille alphabets and numeric to visually impaired children. It is a simple and portable device and can be easily adapted by the user with little or no support at all. The present invention is simple, cost effective and portable solution and aims to teach Braille to children between the

age of 5 – 10 years in a minimum amount of time with some special features outlines in the following summary.

3. SUMMARY OF INVENTION

[04] The current invention imparts certain advantages in the learning and teaching of basic Braille characters which prepares for the following outlined objectives.

[05] A portable standalone device with a primary purpose to teach Braille alphabets and numerals to the blind visually impaired children through audible aid and soft keys to press are main objectives of this invention.

[06] A low cost device that would be easier to be commercialised and to be used by visually impaired children in remotely located areas with little or no support at all and without the need of trained personnel or a Braille expertise is a prominent objective of this invention.

[07] Another objective is to teach Braille alphabets in a very short span of time, this is fulfilled through a special feature that teaches a character with its suitable Phenom.

[08] Another key feature is to work with various modes, for instance a button for alphabets, a button that would change the mode to numbers and a specific button that would change the mode of the device to teach Phenom.

[09] All the key features and functionality of the invention would be presented with the aid of detailed description and drawings, which would rather explain the operation of the device and the effectiveness of the features.

4. BRIEF DESCRIPTION OF THE DRAWINGS

[10] Main features of the various embodiments related herein will be better understood with respect to the following drawings, in which like numbers refer to like parts throughout.

[11] Fig. 1 is a plan view of the invention herein that shows its major embodiments.

[12] Fig. 2 is an isometric drawing of the invention herein that shows its side view with an exemplary embodiment of the present invention.

[13] Fig. 3 is a block diagram of the educational slate and its circuit components of the invention herein.

5. DESCRIPTION OF THE INVENTION

[14] Brief description of the drawings of present invention is given below with the aid of detailed description of individual embodiment.

[15] Fig.1 shows the plan view of the educational slate 100. To describe the embodiments as of Fig.1, it comprises of non – slip hard case 180 which encloses the Braille buttons together with all the system embodiments which are housed on the base cover. When a child learner uses the educational slate, device to be grasped with both hands onto the non- slip body 180 and placed on a flat surface, the devices is first switched on using slide switch 170 shown in Fig.1. The device is charged only when it is switched off by inserting the micro USB charger 210 in the charging slot 200 as in Fig.2. While charging the user can keep track of the charging status through audio interference at every 2 minutes interval.

[16] When the educational slate 100 of the invention herein is assembled (referring to Fig.3), the push buttons correspondence to Braille characters 300, 350 and 360 and the three mode buttons 140, the speech and amplifier circuit 330, power circuit constituent of charging circuit 320, battery 310 and power switch 170 and the boost converter module for battery voltage conversion from 3.7V to 5V is mounted on a single printed circuit board (PCB). The two speakers 150 (Fig.1) and amplifier circuit as of Fig.3 is wired to the same PCB and are housed well inside the educational slate 100.

[17] When a blind person utilizes the educational slate, the device 100 is grasped by hand and placed on a flat surface and it is turned on using switch 170. The non- slipping cover 180 provides grip between the surface and the device. Whilst switched on, the slate executes its first mode of operations. First mode is for Braille alphabets as in Fig. 1, 110, 120 and 130 keys represent Braille alphabets from A-Z. Upon key press, voice for the corresponding alphabet is perceived from the speakers 150. To switch to second mode using the second mode button from the bottom left 140 (referring to Fig 1) executes the second mode which is for numbers as denoted by the first row keys 110. The first 9 keys in first row represents numbers from 1-9 and the last key in the first row represents number 0. The remaining keys become insignificant in the second mode. Third mode is entered by pressing the third button from the bottom left 140. The third mode is for phenomes of Braille alphabets which makes children learn Braille faster through a rhyming phrase for each Braille alphabet. Volume

control knob 160, Fig.1 used to adjust to the user hearing ability. Educational slate is light weight adding to device portability and easier accessibility.

[18] The slate 100, also incorporates 3 keys 140 (referring to Fig.1) which denoted the mode buttons. First button from the bottom left is for mode one which is for alphabets, second button from the bottom left is for numbers and the third denotes the mode button for phenoms.

[19] The educational slate 100 further includes an alert sound for blind user at every 5 minute interval if the battery level is low and needs charging. While charging the device 100 keeps notifying the user of the current charge status at every 2 minutes interval. Once charging is complete it instructs the user to remove the charger through audio notification aid.

[20] All the above description of the educational slate, presents a device that is portable, easily adoptable by the blind children, has simple handling, and its low cost enables it to be easily accessible by the blind and parents can also afford it.

[21] In summary of the foregoing section, one accomplished in the art could invent variations that are within the scope including configurations ways of the recessed portions and materials and design of the body or structures. Further, the slate has many attributes that contributes to early childhood learning for the visually impaired children thus the scope of the claims is not to be limited by the illustrated bywords.

Editorial Note

2017100226

There is only 1
page of claims.

BRaille SLATE TO TEACH CHILDREN WITH VISUAL DISABILITIES

CLAIMS

1. A portable electronic gadget, namely educational slate, a portable, easily adoptable device which would provide basic Braille education to the visually impaired children. Further, visually impaired can easily utilize the device with little or no supervision from trained personnel adding it to self-sufficiency of the present invention.
2. A educational tool as claimed in 1 and 2 above, wherein the device is simple and low cost solution to provide early childhood education to the visually impaired children to build their base for further education leading to economic independence of the visually impaired ones.
3. The software logic provides easy accessibility with implementation of features like battery level indication and charge status indication through voice output with the aid of speech and amplifier module of the present invention.
4. An educational tool that teaches Braille alphabets in a short span of time in a “fun way” with features like phenomes for alphabets which makes learning interesting and enjoyable for the children.
5. A tool can be used by Braille teachers to refer back to Braille alphabet and numeric while providing Braille education.
6. A device that teaches Braille at a young age, just like a toy with learning purpose such that the visually impaired grasp Braille easily and can easily pick up to higher Braille education.

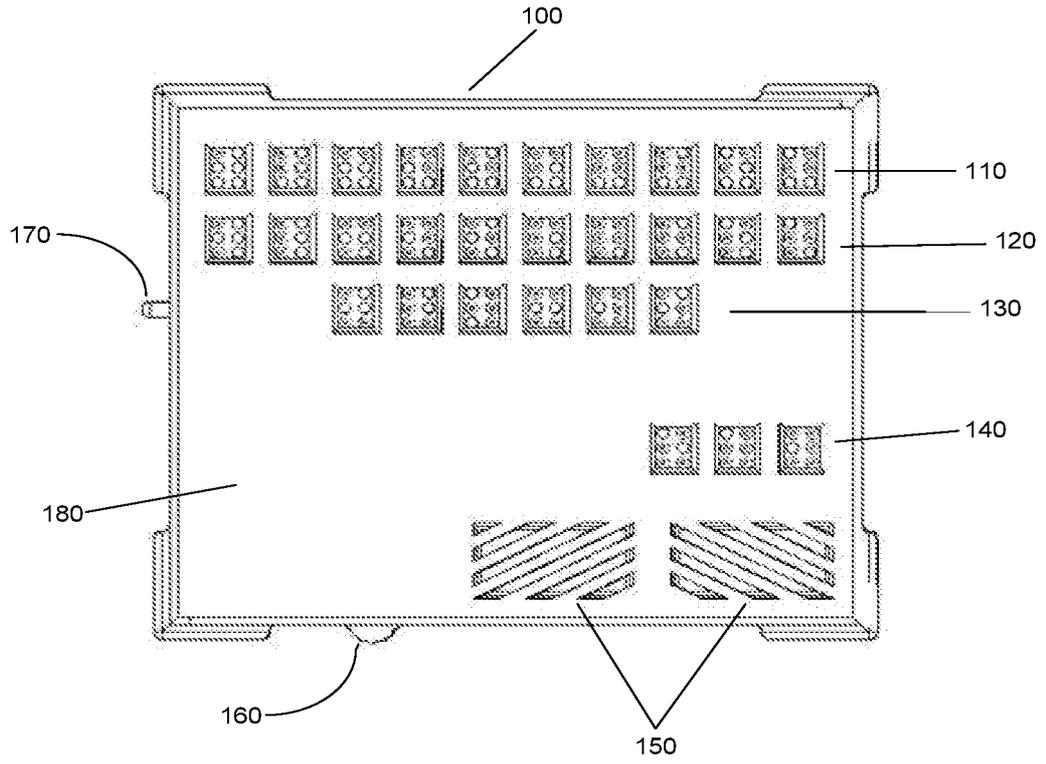


Figure 1

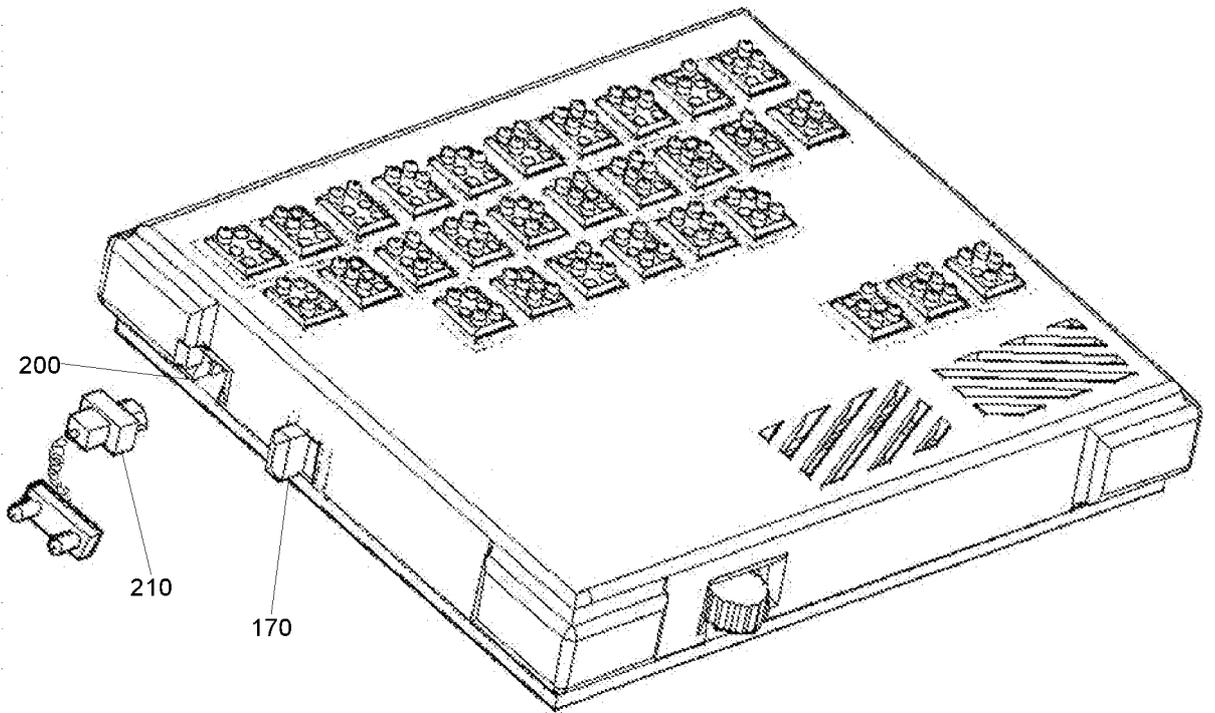


Figure 2

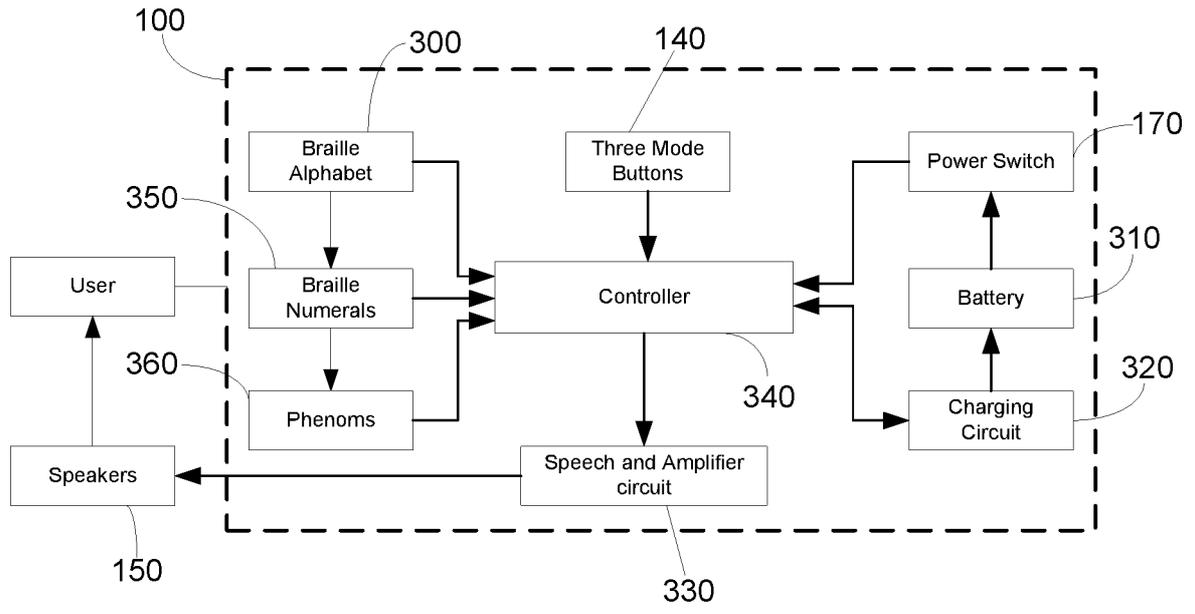


Figure 3