

AS: 98.141

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 05-069396- -00005-0000

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- Sub: RESOLUCION Folios: 2

Señores

**SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO**

## DIVISION DE NUEVAS CREACIONES

F. S. D.

REF.: Expediente No. 05 069.396 - Solicitud de Patente FASE NACIONAL

Corresp. a la Solicitud Internacional PCT/NL2004/000020.

a nombre de: **KLANKIE B.V.**

Titulada: DISPOSITIVO Y MÉTODO PARA ARTICULAR FONEMAS, Y TECLADO PARA USO EN TAL DISPOSITIVO.

JUAN PABLO CADENA SARMIENTO, vecino de Bogotá, portador de la tarjeta profesional No. 57492 del Consejo Superior de la Judicatura, obrando como apoderado de la Sociedad **KLANKLIE B.V.**, según lo acredita el documento de poder presentado en esa División, de acuerdo con el Artículo 44 de la Decisión 486 de la Comisión de la Comunidad Andina, me permito solicitar que se examine si la invención contenida en la solicitud en referencia es patentable.

De acuerdo con lo anterior, me permito anexar el recibo oficial de caja No. 07-67,208 por valor de \$202.000.

De la Señora Jefe atentamente,

**JUAN PABLO CADENA SARMIENTO**

C.C. No. 80.410.337 de Usaquén

T.P. No. 57492 del C.S.J.

Cra 7 No. 71-21 Torre B, Piso 4

Bogotá, 07 de noviembre de 2007

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| DEPOSITANTE      | TIPO PAGO    | BANCO         | CUENTA      | Nº. PAGO | FECHA PGO  | Vr. PAGO      |
|------------------|--------------|---------------|-------------|----------|------------|---------------|
| BRIGARD Y CASTRO | CONSIGNACION | BANCO POPULAR | 050-00110-6 | 51181672 | 17/08/2007 | 16.740.000.00 |

| CONT. PATENTIZADO |                         | CONCEPTO                                | TOTAL CONCEPTO |
|-------------------|-------------------------|-----------------------------------------|----------------|
| -----             |                         |                                         |                |
| 1                 | 50005-01-01 SOLICITUDES | 114 PTC CAP-II EXAMEN DE PATENTIBILIDAD | 202,000.00     |
|                   |                         | TOTAL :                                 | \$ 202,000.00  |

RESPONSABLE : \_\_\_\_\_

RECIBO DE CASH APLICADO AL EXPEDIENTE No. 1

**DIVISIÓN DE NUEVAS CREACIONES**

RADICACIÓN EXPEDIENTE No. 05-69396

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **576** DE

FECHA **31 DE MAYO DE 2007** EL TÉRMINO HÁBIL SEÑALADO POR LA LEY

EXPIRA EL **31 DE AGOSTO DE 2007**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI \_\_\_\_\_

NO       X

**United States Patent** [19]  
**Willetts**

[11] **Patent Number:** 5,010,495  
[45] **Date of Patent:** Apr. 23, 1991

[54] **INTERACTIVE LANGUAGE LEARNING SYSTEM**

[75] **Inventor:** John A. Willetts, Kensington, Md.  
[73] **Assignee:** American Language Academy, Rockville, Md.  
[21] **Appl. No.:** 305,223  
[22] **Filed:** Feb. 2, 1989  
[51] **Int. Cl.<sup>5</sup>** ..... G10L 5/00  
[52] **U.S. Cl.** ..... 364/513.5; 364/900; 364/419  
[58] **Field of Search** ..... 364/513.5, 419, 900 MS File  
[56] **References Cited**

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*Primary Examiner*—Emanuel S. Kemeny  
*Attorney, Agent, or Firm*—Nixon & Vanderhye

[57] **ABSTRACT**

An interactive computer assisted language learning system which allows a student to select a model phrase from text displayed on an electronic display; record (in digitized form) his own pronunciation of that phrase; and instantly listen to the digitized vocal version of the selected phrase and his own recorded pronunciation for comparison purposes. An audio CLIP mode permits the student to select any (random) portion of displayed text (e.g., a phrase, a small part of a phrase, a single word, a syllable, or a phoneme) using cursor control or the like and to control the system to play the voice corresponding to that selected portion. A SoundSort text reconstruction exercise based on aural clues automatically randomizes the order of plural phrases, provides digitized utterances of the phrases in the randomized order, and requires the student to reconstruct the original order using a visual display interface. Integration of digitized sound in a high-level authoring system (as distinct from an authoring language) is provided. An easy-to-use "WYSIWYG" ("What you see is what you get") user interface reduces or eliminates user mistakes and associated frustration and does not require the user to have any programming ability. An extremely flexible authoring system allows a teacher to link recorded digitized sound with customized on-screen text (which may but need not match the digitized sound). This allows a wide variety of free-form exercises to be created.

**25 Claims, 39 Drawing Sheets**

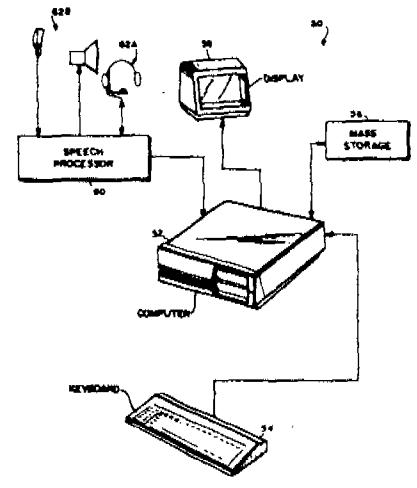
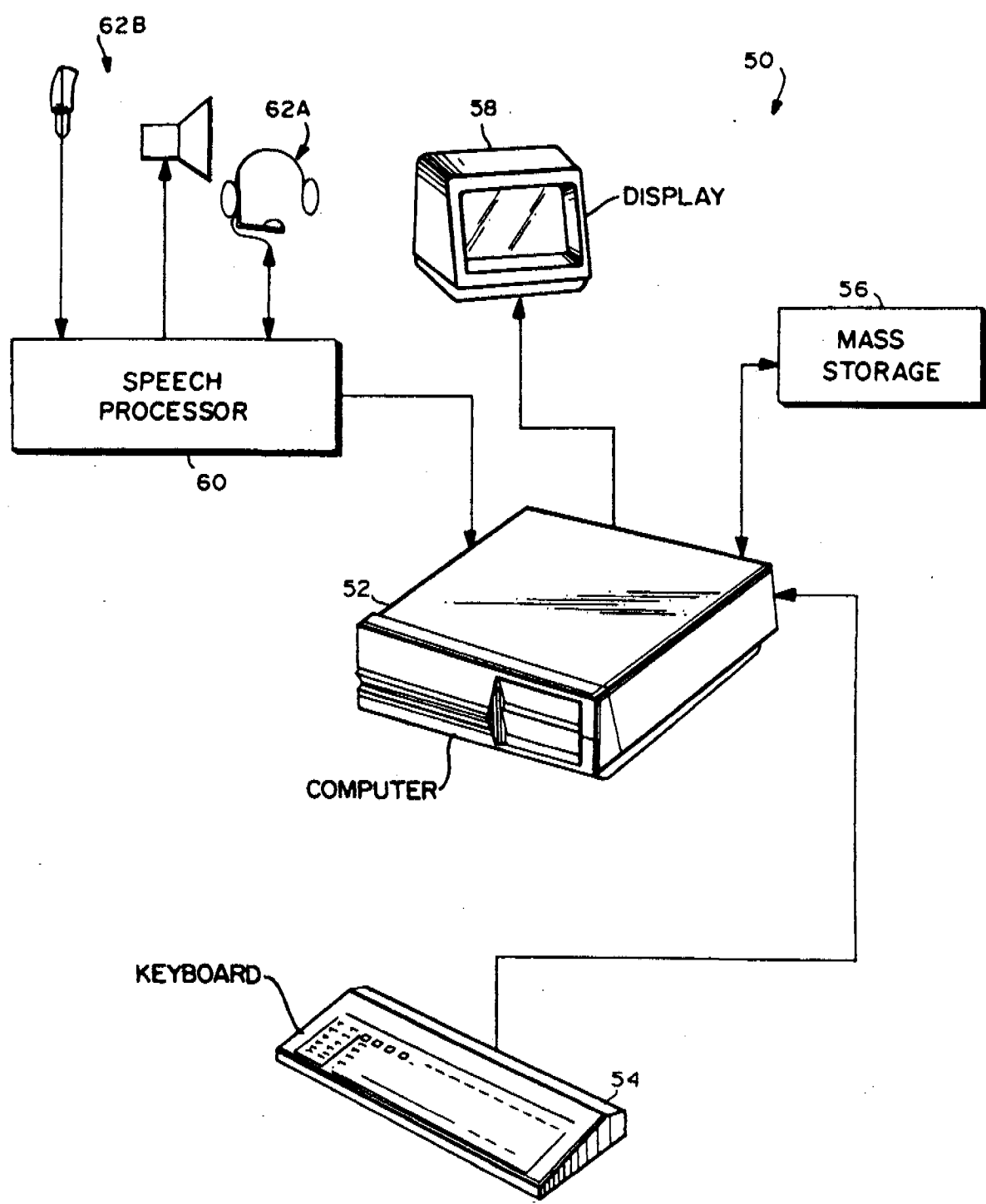


FIG. 1



The AudioLab function provides the student with practice in pronunciation and listening comprehension. In the preferred embodiment, the AudioLab option or function has three different modes: PREVIEW (block 108); LAB (block 110); and CLIP (block 112). In the PREVIEW mode, the student listens to the entire selected text and also sets the playback volume for all of the routines (AudioLab, SoundSort and AudioWrite). In the LAB mode (block 110), the student listens to phrases from the text and may also record his own speech and may compare his played back voice to the original. In both the PREVIEW and LAB mode the student may choose to see the phrases and text in different combinations again on display 58 or he can choose to listen without viewing the text. From the LAB mode, student may select the CLIP mode (block 112). In the CLIP mode, the student may choose to work on any selected portion of a phrase to permit him to practice difficult sounds.

Upon selecting the AudioLab option from main display 106 in the preferred embodiment, system 60 begins performing the AudioLab PREVIEW mode (block 108). FIG. 3A is a graphical description of some of the options presented by the preferred embodiment in the PREVIEW mode. The student may adjust volume level by depressing the left arrow key (to decrease volume level) or the right arrow key (to increase volume level)—and this volume level adjustment remains in effect for all functions (programs) provided by system 50. To begin playing a prerecorded lesson, the student depresses the F2 function on keyboard 54 on the preferred embodiment. In the preferred embodiment, this causes system 50 to begin producing audio in headset 62a by controlling speech processor 60 to convert digitized speech stored on mass storage device 56 into audio signals.

In the preferred embodiment, one or more screens of text may be associated with a particular block of stored digitized speech, and in the PREVIEW mode this text may be displayed by display 58 while system 50 produces the converted audio signals from the digitized speech. This associated text is typically actual text corresponding to the speech being reproduced (since the student may then "read along" with the digitized speech being played back), but it may have some other contents—depending upon what the teacher desires (as will be explained). To stop the speech (and text) generation, the student may depress the ESC (escape) key of keyboard 54. To resume speech/text reproduction, the student may depress the F2 key again. Depressing the ESC key another time returns the student to the main menu (FIG. 2, block 106). Depressing the ENTER key causes the LAB mode to be entered (FIG. 2, block 110). On-line help is available by depressing the F1 key in the preferred embodiment.

FIG. 3B is a graphical illustration of options available to the student in the LAB mode of the AudioLab function (FIG. 2, block 110). In this LAB mode, the student can select different phrases (e.g., sentences) to listen to in isolation one or more times. If the student wishes to concentrate on a specific phrase, he selects the LAB mode by depressing the ENTER key. Once in the LAB mode, the student may select the phrase he wishes to concentrate on using cursor control keys. If in the PREVIEW mode the student has his text turned off (this is the default mode), then in the LAB mode only the selected phrase will be displayed by display 58. If, on the other hand, the student in the PREVIEW mode se-

lected that the text should be displayed (by depressing F7), the full text is displayed on display 58 but the selected phrase is highlighted. The left arrow and the right arrow keys in the preferred embodiment move the display "work box" to different phrases, and the F6 key is used to turn a phrase on and off—thereby selecting the phrase to be treated using the LAB mode.

Once the student has selected a phrase, he can depress the F2 key to control speech processor 60 to play back the digitized speech corresponding to that phrase. By depressing the F3 key, the student may record his own pronunciation of the same phrase. Once the F3 key is depressed, the student is prompted to depress the space key to begin recording (and may adjust the recording level using the left arrow and right arrow keys). Upon depressing the space bar, speech processor 60 begins converting audio applied at its audio input (e.g., from the microphone in headset 62a) into digitized speech information and storing the digitized speech (on a virtual disk). When the student is through speaking, he depresses the space bar again to stop recording. The student may then depress the F4 key to instantly play back his own just-recorded speech—or depress the F2 key to listen again to the model pronunciation of the selected phrase. Depressing the ESC key returns system 50 to the PREVIEW mode (FIG. 2, block 108), while depressing the F5 key controls system 52 to perform the AudioLab CLIP mode (FIG. 2, block 112).

The CLIP mode in the preferred embodiment allows the student to analyze any section or part of a phrase selected in the LAB mode. A graphical illustration of options presented to the student in the CLIP mode are shown in FIG. 3C. In the preferred embodiment, the CLIP mode permits the student to examine any section or part of the model digitized speech recording down to a single phoneme (0.1 seconds in duration). In addition, the complete phrase can be heard by depressing a control key (e.g., F2).

In the CLIP mode, the cursor control keys (up arrow, down arrow, left arrow, right arrow) are used to select which part of the current phrase is to be played back. A graphical illustration of the length of the currently selected portion of the phrase is displayed at the bottom of display 58 in the preferred embodiment. In the preferred embodiment, this graphical illustration includes a horizontal line having a length proportional to the length of the selected phrase portion. The length and position of this horizontal line change in response to cursor controls to change the length and position of the selected portion relative to the current phrase.

Once the student has selected the portion of the phrase he wishes to concentrate on, he depresses the F5 key to listen to the selected portion. As in the LAB mode, the student may record and play back his own voice using the F3 and F4 keys, and alternate playback of his voice with playback of the selected clip by toggling the F5 and F4 keys. Depressing the F8 key resets the clip to allow the student to select a different part of the phrase. Depressing the ESC key returns system 50 to the LAB mode (FIG. 2, block 110).

The AudioWrite function (FIG. 2, block 114) provides the student with an exercise in listening and writing by requiring the student to type phrases he hears. The student may listen to each phrase as many times as he wishes, and may also listen to the entire text before concentrating on each phrase (since in the preferred embodiment the typing exercise operates on a phrase-by-phrase basis). Once the student has typed a particular

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available to the students for a particular lesson. In the preferred embodiment, the AudioLab function is always available to the student. However, certain exercises may not be suitable for the SoundSort or AudioWrite function. At block 946, system 50 prompts the teacher to choose student functions that should be available to students and to delete functions that should not be available to the student. Blocks 950-958 result in displaying the same main menu seen by the student and permitting the teacher to delete one or both of the AudioWrite or SoundSort options or to undelete those options (blocks 956, 954, respectively). Depressing the ENTER key saves the student selection data (block 958) and returns control to FIG. 11A block 602 to permit the teacher to either exit the studio routine or to work on creating another lesson.

The present invention thus provides an extremely flexible environment for creating preprogrammed audio visual lessons in which both the audio portion and the textual portion can be programmed by the teacher. Once lessons have been constructed in this fashion, they can be used by the student in a variety of different ways to develop different skills. For example, the Audiolab student function works on reading and listening comprehension; the AudioWrite function concentrates on listening, comprehension and writing skills; while the sound functions concentrates on listening, comprehension, grammatical and other skills. Since the same lesson can be used for various functions, the burden on the teacher is eased, while great flexibility is maintained. All of these features are provided by a truly interactive language learning system in which the student is exposed to both audio and visual stimuli and is capable of either listening to recorded model digitized speech and/or to his own attempts to pronounce the speech using self-correction methodology.

While the invention has been described in connection with what is presently considered to be the most practical and preferred embodiments, it is to be understood that the invention is not to be limited to the disclosed embodiments, but on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.

What is claimed is:

1. An interactive language learning system comprising:
  - storing means for storing a digitized speech version of a passage of language and for also storing a digital data textual version of said same passage;
  - a display for displaying text corresponding to said passage;
  - selecting means operatively connected to said display and to said storing means and operable by a user for selecting a portion of said passage, and for causing the portion of said stored digital data textual version corresponding to said selected passage portion to be displayed as text on said display; and
  - speech processing means for:
    - selecting the portion of said stored digitized speech version corresponding to said selected portion of said passage,
    - converting said selected digitized speech version portion to audio signals for use in generating speech sounds,
    - converting audio signals representing user speech into digitized speech signals representing said user speech, and

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subsequently reconvert said digitized speech signals representing said user speech to audio signals for use in generating further speech sounds so as to permit said user to listen to and compare his own speech with a spoken version of said passage corresponding to said stored digitized speech version.

2. A system as in claim 1 wherein:
  - said system further includes a transducer which converts user speech to audio signals;
  - said speech processing means includes means connected to said transducer for converting said audio signals to digitized speech signals and for temporarily storing said digitized speech signals;
  - said display also displays a symbol; and
  - said system further includes user input means for permitting said user to (i) select said portion of said passage by manipulating the position of said symbol displayed by said display with respect to said displayed text, and (ii) control said speech processing means to rapidly alternate (a) converting said temporarily stored digitized speech signals representing his own speech to audio signals, and (b) converting said digitized speech signals corresponding to said selected portion of said passage to audio signals so as to alternately generate sounds corresponding to said user's speech and sounds corresponding to said stored digitized speech version.
3. A system as in claim 1 wherein:
  - said speech processing means generates processor interrupts; and
  - said system further includes interrupt means for reading said digitized speech version from said storing means for conversion to audio signals by said speech processing means in response to said generated processor interrupts.
4. A system as in claim 1 wherein:
  - said selecting means includes means for selecting the position and length of a portion of said passage;
  - said speech processing means includes further selecting means for selecting only those portions of said stored digitized speech version corresponding to said selected passage portion; and
  - said speech processing means also includes means for converting only said selected stored digitized speech version portions to audio signals.
5. A system as in claim 1 wherein said first-mentioned selecting means comprises cursor control means manipulable by said user for selecting portions of said text displayed by said display and for thereby selecting corresponding portions of said stored digitized speech version for conversion to audio signals.
6. A system as in claim 5 further including means connected to said cursor control means and to said display for causing said selected text portions displayed by said display to have a different displayed appearance than the non-selected displayed text portions.
7. A system as in claim 5 wherein said system further includes text display selection means, manipulable by said user and operatively connected to said display, for alternately selecting: (a) display of only said selected text portions, and (b) display of the entire textual version of said passage including said selected text portion.
8. A system as in claim 1 wherein said speech processing means includes means for converting between audio signals and adaptive differential pulse code modulation

un idioma en particular". (Folio 51).

Por lo anterior para solucionar este problema la presente solicitud trata de proporcionar: reivindicaciones 1- 14, folios 59 - 61.

IPC: G09B05/04.

3. De la solicitud de patente:

Reivindicación 1 y 14 son demasiado generales y no presentan en forma concisa lo nuevo que se está aportando a la tecnología, ni definen las características que lo hacen diferente de lo ya existente. Las reivindicaciones, para el caso del dispositivo, deben definir técnicamente la forma, la disposición, ubicación, constitución de cada una de las partes y como se acoplan entre sí para conformar el sistema y lo hagan diferente de los dispositivos para articular fonemas existentes, por lo tanto son fácilmente afectables con documentos existentes en el estado de la técnica. Para el caso del método se debe especificar el paso o etapa que lo hace distinto de lo existente en el estado de la técnica. Se sugiere que cuando anexe el nuevo capítulo reivindicatorio lo haga aparte de la respuesta del solicitante.

4. Determinación del Estado de la Técnica

Teniendo en cuenta que la fecha de solicitud es el 2003-01-16, se encontró el siguiente documento relevante:

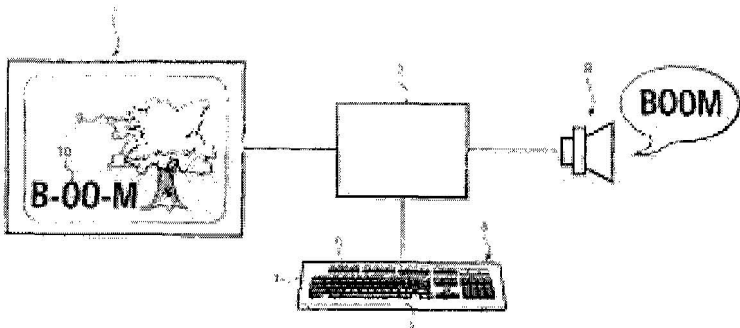
| Nº | Documento                                                                        | Contenido                                                                                 | Fecha de Publicación |
|----|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------|
| D1 | US5010495<br>Inventor: John A. Willets<br>Solicitante: American Language Academy | Interactive language learning system<br>(Sistema interactivo de aprendizaje del lenguaje) | 1991-04-23           |

Documento(s) anexo(s) en los folios 87-90.

5. Análisis de patentabilidad (artículo 81 D486)

5.1. Novedad (artículo 16 D486)

Respecto a la solicitud en estudio se estudiarán las reivindicaciones independientes 1 y 10 que se encuentran en los folios 59-61, y las cuales se soportan por medio de la siguiente figura:



Respecto al estado de la técnica D1 divulga un sistema Interactivo de aprendizaje de idiomas asistida por ordenador que permite a un estudiante elegir un modelo de expresión de texto que se muestra en una pantalla electrónica, se registra (en forma digital), su propia pronunciación de esa frase, y al instante se escucha la voz digitalizada, se selecciona la versión de la frase y su propia pronunciación grabada

con fines de comparación. Un clip en modo de audio permite que el estudiante seleccione cualquiera muestra (aleatoria) parte del texto (por ejemplo, una frase, una pequeña parte de una frase, una sola palabra, una sílaba o un fonema) o utilizando el control del cursor para controlar el sistema de voz y así reproducir la correspondiente parte seleccionada.

Teniendo en cuenta tal y como se plantea la reivindicación 1, además, de acuerdo al estado de la técnica establecido en el numeral 4, el documento más cercano es: el documento D1, con el cual se plantea la siguiente tabla comparativa de características reivindicadas dando a entender que las contiene (SI) o que no las contiene (NO).

| REIVINDICACION 1                                                                                                                                                                                                                                                                                                                                                                                                                                | D1                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dispositivo para articular fonemas, que comprende:<br>1) Un teclado, el cual teclado incluye por lo menos una estructura de soporte y una pluralidad de teclas conectadas a la estructura de soporte, en donde cada tecla de por lo menos un número de teclas se designa con por lo menos un símbolo lingüístico,                                                                                                                               | SI<br>Elemento 54, Columna 9 renglones 20-36 y figura 1 folios 87-90.                                                                                                 |
| 2) Una unidad de procesamiento electrónico conectada al teclado para registrar pulsaciones de teclas, y                                                                                                                                                                                                                                                                                                                                         | SI<br>Elemento 52, Columna 9 renglones 20-36 y figura 1 folios 87-90.                                                                                                 |
| 3) Medios productores de sonido conectados electrónicamente a la unidad de procesamiento, caracterizado por que la unidad de procesamiento se provee con medios de conversión para convertir por lo menos una pulsación registrada de tecla en una señal de un fonema que corresponde al símbolo lingüístico de esta por lo menos una pulsación de tecla, en donde los medios productores de sonido se adaptan para la articulación del fonema. | SI<br>Elementos 62A que incluyen audífonos y parlantes, Columna 9 renglones 20-36, reivindicación 1 donde se cita el convertidor de datos y la figura 1 folios 87-90. |

Se puede concluir de la anterior tabla, que en la solicitud presentada las características 1-3, se encuentran contenidas en el documento D1 de manera idéntica ya que sugiere un dispositivo de conversión de datos digitales a fonemas audibles que posee los mismos elementos citados como son el teclado el procesador y el convertidor para ser escuchado mediante un parlante, por lo que permitiría afirmar que la reivindicación 1 de la presente solicitud NO es novedosa. Por lo tanto no cumpliría con lo expuesto en el artículo 16 de la Decisión 486 de la Comunidad Andina de Naciones. Lo anterior limita el estudio del siguiente requisito de nivel inventivo correspondiente al nivel inventivo. Se recomienda anexar el nuevo capítulo reivindicatorio totalmente a parte a la respuesta del solicitante.

Ahora teniendo en cuenta tal y como se plantea la reivindicación 10, además, de acuerdo al estado de la técnica establecido en el numeral 4, el documento más cercano es: el documento D1, con el cual se plantea la siguiente tabla comparativa de características reivindicadas dando a entender que las contiene (SI) o que no las contiene (NO).

| REIVINDICACION 10                                                                                                               | D1                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Método para articular fonemas que comprende los pasos de:<br>A) pulsar un usuario por lo menos una tecla                        | SI<br>Reivindicación 1 renglones 48-52, folio 90. Se provee un medio para digitar o teclear palabras o textos                      |
| B) registrar la unidad de procesamiento la pulsación de tecla en una señal de un fonema que corresponde a la pulsación de tecla | SI<br>Reivindicación 1 renglones 53-59, folio 90. Se provee un medio de registro o presentación como lo es una pantalla o display. |

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|                                                                                                         |                                                                                                                       |
|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| C) convertir la pulsación de tecla en una señal de un fonema que corresponde a la pulsación de tecla, y | SI<br>Reivindicación 1 renglones 63-65, folio 90. Se provee medios de conversión de señal digital a una señal audible |
| D) Producir acústicamente el fonema                                                                     | SI<br>Reivindicación 1 renglones 66 a la columna 26 renglones 1-7, folio 90.                                          |

Se puede concluir de la anterior tabla, que en la solicitud presentada las características o pasos A-D, se encuentran contenidas en el documento D1 de manera idéntica ya que sugiere un método para producir un fonema o señal de audio con los pasos requeridos por el solicitante mediante los elementos que dispone dicho documento Teclado, pantalla o display, procesador, convertidor y productor de señales, lo que permitiría afirmar que la reivindicación 10 de la presente solicitud NO es novedosa. Por lo tanto no cumpliría con lo expuesto en el artículo 16 de la Decisión 486 de la Comunidad Andina de Naciones. Lo anterior limita el estudio del siguiente requisito de nivel inventivo correspondiente al nivel inventivo.

## 6. Conclusión:

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

| Nº | Documento | Reivindicaciones Afectadas | Requisito que Afecta |
|----|-----------|----------------------------|----------------------|
| D1 | US5010495 | 1-14                       | NOVEDAD              |

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la circular única N° 10 de 2001.

  
**ALIX CARMENZA CÉSPEDES DE VERGEL**  
 Jefe de División de Nuevas Creaciones.

El anterior requerimiento fue notificado por fijación en lista, de fecha 10 JUL. 2009

|                                  |                                                |
|----------------------------------|------------------------------------------------|
| <b>CONCEPTO TÉCNICO</b> No. 1799 | <b>EXAMINADOR TÉCNICO</b><br>Código No. 202083 |
|----------------------------------|------------------------------------------------|

7/10/09