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- (71) **Applicant** (for AG, BB, BR, BZ, CA, CL, CO, CR, DM, DO, EC, GD, GT, HN, KN, LC, MX, NI, PA, PE, SV, TT, VC only): **VASCO DATA SECURITY, INC.** [US/US]; 1901 South Meyers Road, Suite 210, Oakbrook Terrace, IL 60181 (US).
- (71) **Applicant** (for all designated States except AG, BB, BR, BZ, CA, CL, CO, CR, DM, DO, EC, GD, GT, HN, KN, LC, MX, NI, PA, PE, SV, TT, VC): **VASCO DATA SECURITY INTERNATIONAL GMBH** [CH/CH]; World-Wide Business Center, Balz-Zimmermannstrasse 7, CH-8152 Glattburg (CH).
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- (81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

[Continued on next page]

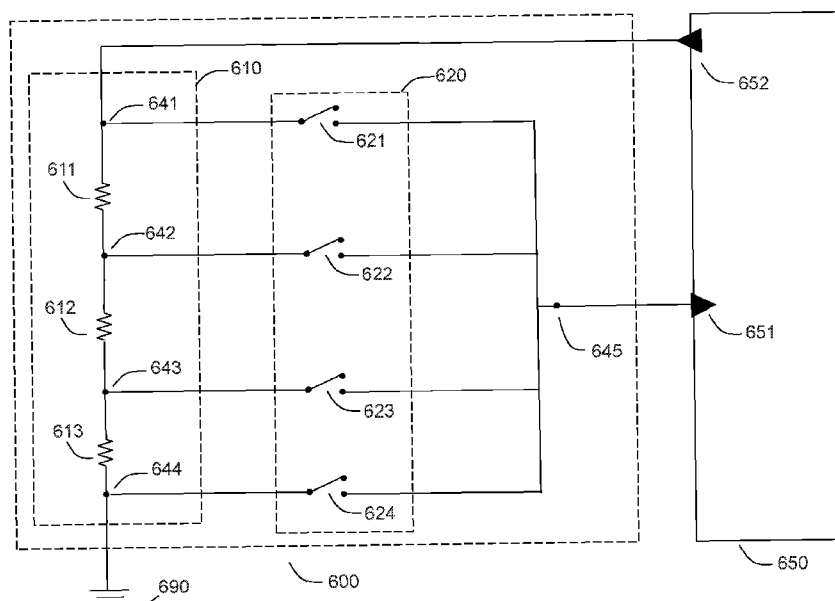
(54) **Title:** AN ELECTRONIC APPARATUS COMPRISING A LINEAR KEYPAD

Figure 6

(57) **Abstract:** An electronic circuit providing a linear keypad and an apparatus comprising such electronic circuit are provided. Methods for detecting that a button of a linear keypad is being pressed and for determining which button is being pressed are also provided. A method for calibrating an apparatus comprising a linear keypad to enable the subsequent determination by the apparatus of which button of the linear keypad is being pressed is also provided.

**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:

24 August 2017

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- *with international search report (Art. 21(3))*

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2017/012063

A. CLASSIFICATION OF SUBJECT MATTER
 INV. H03M11/24 G06F3/02
 ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 H03M G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/068303 A1 (HO CHI-YU [TW] ET AL) 31 March 2005 (2005-03-31)	1-4, 7-13, 30-33
Y	abstract; figures 2-4	5,6,40,
A	paragraph [0002] paragraph [0010] - paragraph [0011] paragraph [0018] - paragraph [0022]	42-46 14-29,41
X	US 6 577 250 B1 (YEE DAWSON [US]) 10 June 2003 (2003-06-10) abstract; figures 6, 7 column 4, line 50 - column 6, line 41 claims 17-19 ----- -/--	1,2, 34-39



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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11/07/2017

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2017/012063

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2004/114222 A1 (KATSUMATA MASAYA [JP]) 17 June 2004 (2004-06-17) abstract; figures 1, 5-7 paragraph [0008] paragraph [0011] paragraph [0057] - paragraph [0074] -----	5
Y	EP 1 086 532 A1 (QUALCOMM INC [US]) 28 March 2001 (2001-03-28) abstract; figures 2,3 paragraph [0006] - paragraph [0007] paragraph [0010] paragraph [0031] -----	6
A	WO 00/30263 A1 (QUALCOMM INC [US]) 25 May 2000 (2000-05-25) abstract; figure 1 page 3, line 12 - page 4, line 7 -----	8-12
A	US 4 211 915 A (MILLER DONALD E [US] ET AL) 8 July 1980 (1980-07-08) abstract; figures 1, 5 column 3, line 45 - column 4, line 41 column 5, line 44 - line 53 -----	14-29
Y	US 2014/240296 A1 (KIM JEE HOON [US] ET AL) 28 August 2014 (2014-08-28) abstract; figures 1, 2 paragraph [0021] - paragraph [0033] -----	40,42-46
A	US 5 619 196 A (ESCOBOSA MARCUS [US]) 8 April 1997 (1997-04-08) abstract; figures 1, 2 column 3, line 25 - column 4, line 60 -----	40-46

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2017/012063

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-13, 30-39

An arrangement for detecting that a button has been pressed in a linear keyboard.

2. claims: 14-29

An arrangement for preventing a current peak in a linear keyboard when a button has been pressed.

3. claims: 40-46

Method for calibrating a linear keyboard.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2017/012063

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005068303	A1	31-03-2005	NONE
US 6577250	B1	10-06-2003	NONE
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