EMOTICON KEYPAD WITH REMOVABLE KEYS, AND RELATING USE OF THE REMOVABLE KEYS

FIG. 6

(57) Abstract: Described herein is a key (6) configured so as to be coupled by means of a removable coupling to a keypad (5) associated to a processor (2) for inputting special graphic symbols, in particular emotions; the key (6) is provided with a cap (30), having a lower edge that is to be located at an upper surface of the keypad (5) and defining a pair of recesses (32), designed to be engaged, in use, by a decoupling element (17) for carrying out decoupling of the key (6) from the keypad (5). Moreover described are a keypad (5) provided with a plurality of the above keys (6) for inputting special graphic symbols, in particular emotions, and an ornamental item (52; 52'), such as a bracelet, necklace or ring, provided with the same key (6).
EMOTICON KEYPAD WITH REMOVABLE KEYS, AND RELATING USE OF THE REMOVABLE KEYS

TECHNICAL FIELD
The present invention relates to a keypad with removable keys, in particular dedicated to input of special graphic symbols (for example, emoticons), and to a use of the removable keys.

Alongside the increasing development of the Internet and of wireless-communication systems, the last few years have witnessed an increasing use of instant-messaging (IM) applications. In a known way, instant-messaging applications enable real-time exchange, between users connected in a wireless-communication network (for example, the Internet), of text messages (or, in combination, further types of information, for instance images or videos).

BACKGROUND ART
In particular, the popularity is known in these instant-messaging applications of the so-called "emoticons" (the term being a combination of "emotion" and "icon"), which are used to integrate the contents of messages of a text type. Emoticons are special graphic symbols designed to represent in a visual and immediate way emotions, states of mind, or thoughts of the user; these graphic symbols are usually represented by small faces (the so-called "smileys"), which are more or less stylized and have an extremely wide range of expressions. In particular, emoticons are more and more employed by users to express their own distinctive character and their own individuality, and users distinguish themselves precisely as regards the choices made in using the emoticons. Furthermore, as on the other hand occurs as regards the terms used in common language, emoticons are subject to the trends of fashion of the moment so that, whereas at a given moment use of certain types of emoticons decreases, others become
popular and are consequently adopted by the majority of users.

Instant-messaging programs enable input of emoticons within text messages, via purposely provided menus, implemented via software and displayed on the display devices of the computers, through which the user is able to select the particular emoticon he or she wishes to use.

The use of menus from which the user can select a definite number of icons is not able to meet all the user requirements, in particular on account of the evident limitations regarding the convenience and immediacy of inputting the emoticons and the number and type of emoticons that can be used each time.

In this field, the need is consequently certainly felt to optimize the modalities and possibilities with which the user can input emoticons (or, in an altogether similar way, different special graphic symbols) within instant-messaging applications (or other word-processing applications).

DISCLOSURE OF INVENTION
The aim of the present invention is to overcome, either wholly or in part, the problems and limitations associated to the use of emoticons (or different special graphic symbols) in the applications of a known type, and to satisfy the requirements previously discussed.

According to the present invention there are consequently provided a removable key for a keypad for special graphic symbols, and a keypad for special graphic symbols, substantially as defined in claims 1 and 8, respectively.

BRIEF DESCRIPTION OF THE DRAWINGS
For a better understanding of the invention, embodiments thereof are now described purely by way of non-limiting
example and with reference to the attached drawings, wherein:
- Figure 1 is a schematic representation of an instant-messaging system, according to one aspect of the present invention;
- Figure 2 is an exploded view of a keypad for emoticons, according to one embodiment of the present invention;
- Figures 3a and 3b show an extraction element for extracting keys from the keypad of Figure 2, in one first operating condition and one second operating condition;
- Figures 4a and 4b show, respectively in an exploded view and in an overall perspective view, a key of the keypad of Figure 2;
- Figure 5 shows an overall perspective view of the keypad of Figure 2;
- Figure 6 illustrates an operating condition of extraction of a key from the keypad of Figure 5;
- Figures 7a and 7b show, respectively, in a partially exploded perspective view and in an overall perspective view, a decorative element made via the key of Figures 4a and 4b;
- Figure 8 is a perspective view of a further decorative element made using a plurality of keys; and
- Figures 9a, 9b show, respectively, in a partially exploded perspective view and in an overall perspective view, a further decorative element obtained via a portion of the key of Figures 4a and 4b.

BEST MODE FOR CARRYING OUT THE INVENTION

In Figure 1 an electronic instant-messaging system is designated by the reference number 1; the system comprises a processor 2 (for example, a desktop computer, or alternatively a portable computer, a PDA, or another processing device of a known type), provided with a display unit 3 and a data-input unit 4 (for example, a keyboard of a traditional type, that is designed for input of alphanumeric characters). In a per-se known manner, the computer 2 is provided with a software program that is able to implement a word-processing
application (in the example, an instant-messaging application), to recognize the alphanumeric characters entered via the data-input unit 4 and to display them on the screen of the display unit 3.

According to one aspect of the present invention, the electronic system 1 further comprises a keypad 5, connected to the computer 2 and dedicated to input of special graphic symbols in the word-processing application, in particular input of emoticons 7. The keypad 5 is a unit that is distinct and separate from the data-input unit 4, can be connected to the computer 2 in a cabled manner (for example, via a USB port, or other connection of a known type), or alternatively in wireless mode (for example, with Bluetooth connection or other proximity radio-frequency connection), and comprises a plurality of keys 6, each associated to a particular emoticon 7 (this emoticon being represented on a touch portion of the key 6 for its immediate identification by the user).

In order to use the keypad 5, the electronic system 1 envisages a purposely provided driver installed on board the computer 2, which is able to recognize the information sent by the keypad and identifying the key 6 that is each time pressed (for example, this information may comprise identifier codes). The driver enables identification of the special graphic symbol corresponding to the key pressed (for example, using a look-up table), and provision of these information to the word-processing application for input of the special graphic symbol in the text during composition and for its display on the display unit 3.

Keypad 5 consequently is for the user an advantageous tool for input of special graphic symbols (for example, emoticons), enabling, in a practically immediate way, choice of the symbol to be used and input of the same symbol into the word-processing application, in particular without this requiring
laborious operations of menu selections.

According to a particular aspect of the present invention, which will be described in detail in what follows, keypad 5 is configured in such a way that the keys 6 are individually removable and replaceable. This characteristic enables the user to configure, precisely as he or she wishes, the keys 6 of the keypad 5, for instance by inserting each time the most fashionable set of emoticons or the ones that best reflect his or her particular state of mind, for subsequent use in the word-processing application.

In greater detail (see the exploded view of Figure 2), the keypad 5 comprises a printed circuit board 10, coupled to which is a matrix (for example, a square matrix with four rows and four columns) of electrical pushbuttons 11, each associated to a key 6 of the keypad 5, and a connector 12, for example, a mini-USB connector (or a connector of other standard or proprietary format). In a way in itself known (not illustrated in detail herein), the various electrical connections required are also made on the printed circuit board 10, and further electronic components (for example, dedicated to data-processing operations) are possibly coupled thereto.

The keypad 5 further comprises a base 14, designed to house the printed circuit board 10 and provided for this purpose with appropriate fixing elements (not described in detail). The base 14, which for example has in plan view a roughly square shape, has a side opening 15, which is to be engaged by the connector 12 (to enable insertion of a purposely provided cable for connection to the computer 2, for example, a USB cable), and a seat 16 for a clamp (or tweezers) 17 of the keypad 5. The seat 16 is made on two contiguous side walls of the base 14 and is to be engaged by the clamp 17 (as illustrated, for example, in the subsequent Figure 5) in such
a way that the clamp 17 is retractably inserted within the seat 16, setting itself flush with the side walls of the base 14.

As illustrated in detail in Figures 3a and 3b, the clamp 17 comprises a first arm 17a and a second arm 17b, having an end in common, and is configured so as to assume two stable operating configurations: a first, open, operating configuration (see Figure 3a), where the arms 17a and 17b are arranged to form an angle of approximately 90°; and a second, closed, operating condition (see Figure 3b), where the arms 17a and 17b are substantially parallel (the clamp 17 having in this case a U shape). In the first operating condition, the clamp 17 can be housed within the seat 16 of the base 14. The clamp 17 further comprises: two hooks 18, carried by a respective free end of the first arm 17a and of the second arm 17b and extending at right angles from the same end, on the inside of the clamp 17; and two gripping projections 19, which extend on the outside of the clamp 17, in a position corresponding to the aforesaid free ends. As may be seen in the next Figure 5, when the clamp 17 is retractably inserted within the base 14, the gripping projections 19 are accessible from outside so as to enable a user to conveniently remove the clamp 17 from the seat 16.

The keypad 5 further comprises an intermediate layer 20, made of deformable elastic material, designed to couple at the top on the printed circuit 10. A plurality of first through openings 21 is provided in the intermediate layer 20, and made of a single piece therewith is a plurality of housing elements 22, constituted by a pair of vertical walls 22a, facing one another on a respective first through opening 21 and defining between them an insertion first through seat 23. In particular, the arrangement and the number of the first through openings 21 and of the housing elements 22 corresponds to the arrangement and to the number of the electrical pushbuttons 11, which are
to engage a respective through opening 21 and a bottom portion of the insertion seat 23 of a respective housing element 22. In the intermediate layer 20 there is also made a recess 24 for the connector 12.

The keypad 5 further comprises a covering layer 25, which is to overlie the intermediate layer 20, "sandwiching" the intermediate layer 20 and the printed circuit 10 on the base 14. The covering layer 25 is shaped so as to couple to the base 14 (in particular, in such a way as to engage a perimetral groove 26 made on the top edge of the lateral surface of the base 14) and has a plurality of second through openings 28, in particular in a number equal to the electrical pushbuttons 11, having a roughly circular shape in plan view.

Keypad 5 moreover comprises a plurality of keys 6, each of which is to be coupled by snap action, in a releasable way, on a respective housing element 22 of the intermediate layer 20, through a respective second through opening 28 of the covering layer 25.

According to one aspect of the present invention (see also next Figures 4a and 4b), each key 6 comprises a cap 30 having a hollow hemispherical conformation and made of light material, for example, plastic. In particular, the cap 30 has a median axis of symmetry A, which extends transversely with respect thereto, and a pair of recesses 32 made in a lower edge thereof and having an arched section, which are set facing each other on diametrically opposite sides of the median axis of symmetry A. The cap 30 has inside an annular projection 33, which extends along the entire internal perimeter above the recesses 32, and a ribbing 34, set laterally starting from the lower edge of the cap 30. The cap 30 is moreover provided with protuberances 35, which extend vertically starting from an internal top surface thereof towards the aforesaid lower edge, for example, in number equal
to four and arranged in crosswise fashion.

Each key 6 further comprises a connecting element 40, provided with a body 41, having a roughly barrel-shaped conformation and traversed in a transverse direction entirely by a passage 42, with circular cross section, obtained in a central position of the same body 41. The body 41 is moreover provided with: a pair of annular grooves 44, which extend along the entire outer perimeter of a bottom edge and a top edge thereof; and a tubular element 45 (having a circular or roughly polygonal cross section), which traverses vertically and centrally the body 41 itself, protruding therefrom at the top and at the bottom, and is moreover fixedly coupled to the passage 42 (for example, being made of a single piece with the same passage 42). The tubular element 45 is hollow and has a diaphragm 46 that defines two recesses 47 in the internal volume of the same tubular element 45. The body 41 also has a vertical groove 48, which extends vertically throughout its height on a portion of its outer lateral surface.

In particular, as will emerge clearly from the ensuing description, the connecting element 40 has a first portion 40a for coupling with the cap 30 and a second portion 40b for coupling with the housing elements 22 of the keypad 5, the second portion 40b being specular to the first portion 40a with respect to a horizontal transverse plane (of symmetry) of the connecting element 40. Preferably, the body 41 has a maximum dimension along the transverse plane that is smaller than that of the lower edge of the cap 30.

In detail, the connecting element 40 is configured so as to slot into (or interlock with) the corresponding cap 30, as illustrated in Figure 4b. For this purpose, the annular projection 33 of the cap 30 is designed to engage an annular groove 44 of the body 41 (for example, the annular groove 44 made in a region corresponding to the top edge); the ribbing
34 of the cap 30 is designed to be inserted in the vertical groove 48 of the body 31; moreover the protuberances 35 of the cap 30 are designed to engage, in pairs, respective recesses 47 of the tubular element 45. In particular, with the key 6 thus coupled, the recesses 32 of the cap 30 are set in a position corresponding to, and communicating with, respective openings of the passage 42, aligned thereto along the median axis of symmetry A, thus constituting a sort of ideal prolongation of the same passage 42.

Once again with reference to Figure 2 and moreover to the subsequent Figure 5, each key 6 is designed to slot into a respective housing element 22, with the corresponding tubular element 45, which is designed to engage with the insertion seat 23 of the housing element 22 and to come into contact against the vertical walls 22a, and with the body 41, which inserts into the second through opening 28. In particular, the caps 30 of the keys 6 set themselves with the corresponding lower edge flush with an upper surface of the covering layer 25; hence the recesses 32 and the corresponding passage 42 are accessible and can be engaged from outside.

In use, the pressure exerted on any one of the keys 6 (and in particular on the touch portion of the corresponding cap 30, which depicts a corresponding emoticon) by a user causes a corresponding vertical deformation of the corresponding housing element 22 until the tubular element 45 comes to bear upon the corresponding electrical pushbutton 11, causing closing of the corresponding contact. Closing of the contact of the electrical pushbutton 11 brings about generation of a corresponding electrical signal, which in turn causes transmission of an identifier code corresponding to the key depressed, through the connector 12 and the connection cable, towards the driver installed in the computer 2 (for subsequent use in the word-processing program).
Furthermore, according to a particular aspect of the present invention (see Figure 6), the configuration described enables convenient removal of any key 6 of the keypad 5, via the use of the clamp 17. For this purpose, the user removes the clamp 17 from its seat 16 within the base 14, and causes, by deformation, closing thereof into the second operating configuration. Then, the user positions the clamp 17 at the key 6 that is to be removed, causing the hook 18 of each arm 17a, 17b to be introduced in a transverse direction within a respective recess 32, and the corresponding passage 42, of the key 6. The clamp 17 can then be pulled away from the keypad 5, thus extracting the key 6, by the same movement, from the corresponding housing element 22. The cap 30 of the key 6 can at this point be decoupled from the corresponding connecting element 40 and replaced with a cap representing a different special graphic symbol (in particular, a different emoticon); once the replacement has been made, the key 6 can then be reinserted into the keypad 5, within the respective housing element 22. In particular, the arrangement of the second through openings 28 is such that between the various keys 6 of the keypad 5 there is a space sufficient for insertion, between the same keys 6, of the arms 17a, 17b of the clamp 17. From the software standpoint, the driver enables a new association to be established between the new graphic symbol and the corresponding electrical pushbutton 11.

A further aspect of the present invention envisages that the key 6, once removed from the keypad 5 (or in any case when decoupled from the same keypad 5), will constitute a functional unit for the production of a different object, in particular an ornamental item, such as for example an item of jewellery, having an autonomous function distinct from the keypad 5.

In detail (see Figures 7a and 7b), in this case a further cap, here designated by 30' (or a similar element having a
conformation altogether similar to that of the cap 30) is coupled to the key 6; this further cap engages the free portion of the tubular element 45 and the corresponding recesses 47 and, moreover, the further annular groove 44 of the connection body 40. The caps 30, 30' mate perfectly (given that the conformation of the connecting element 40 is altogether symmetrical to the transverse plane that centrally traverses the passage 42) to form a spherical element 50 (in particular, a decorative element). In detail, the recesses 32 of the caps 30, 30' define two circular seats about the median axis of symmetry A adjacent to and communicating with the openings of the passage 42.

The ornamental item, designated by 52, comprises the aforesaid spherical element 50 and a filiform element 54 (such as a string, a cord, a chain or the like), which is inserted into the passage 42 through the openings defined by the recesses 32; it is thus possible to form, by possibly coupling further spherical elements 50 (obtained with corresponding keys 6) to one and the same filiform element 54, as illustrated, for example, in Figure 8, a wide range of types of ornamental items 52, such as necklaces, bracelets, or anklets.

A further aspect of the present invention envisages use of the cap 30 of the key 6 as functional element to produce a further ornamental item, here designated by 52'.

In this case (see Figures 9a and 9b), the ornamental item 52', for instance a ring, pin, brooch, or the like, comprises a support 55 (in the example shaped like a ring), having, on a face 55a thereof, a connection base 60 having a structure and function altogether equivalent to that of a half-portion of the connecting element 40 of the key 6. In particular, the connection base 60 is provided with the same means for slotted coupling with the cap 30, and hence with an annular groove 44, a tubular element 45, with corresponding diaphragm 46, and
recesses 47, as well as a vertical groove 48 made in a corresponding side wall. The face 55a also has an annular undercut 61 adjacent to the attachment of the connection base 60, designed to house the lower edge of the cap 30 in such a way that the recesses 32 of the cap 30 will remain accessible from outside for insertion of the hooks 18 of the clamp 17, in a manner altogether similar to what has been described previously.

The advantages that the described keypad, with the corresponding removable keys, allows to achieve emerge clearly from the foregoing discussion.

In particular, it is again emphasized that the keypad 5 enables a user to input special graphic symbols (for example, emoticons) in a simplified and particularly immediate way in word-processing applications (for example, instant-messaging applications). Furthermore, the keys 6 can be easily removed individually using the clamp (extractor element) 17, which is normally inserted in retractile (i.e., flush-mounted) fashion in the base 14 of the keypad 5 so that there is no risk of it getting mislaid or damaged. The user is hence able to reconfigure precisely as he or she wishes and in a simple and intuitive way the layout and the type of the keys 6 (and of the corresponding special graphic symbols) in the keypad 5.

Furthermore, there is advantageously proposed an innovative use of the keys 6 and of the corresponding special graphic symbols in order to create ornamental items 52, 52', for example, jewellery that the user is able to create and reconfigure precisely as he or she wishes, thus having the opportunity to manifest his or her own style and individuality expressed in the word-processing program. In particular, the user is able to use the same keys 6 as elements or functional units for creating ornamental items, in a first condition of use (when they are not coupled to the keypad 5), and as keys
proper for inputting special graphic symbols in a word-processing application of a computer, in a second condition of use (when they are coupled to the keypad).

Finally, it is clear that modifications and variations can be made to what has been described and illustrated herein, without this implying any departure from the scope of the present invention, as defined in the annexed claims.

In particular, it is evident that the shape and configuration of the keys 6, of the keypad 5, and of the corresponding coupling means may be different from the ones illustrated, as likewise different (or of different type) may be the ornamental items obtained via the same keys 6 (used as functional units).

Furthermore, it is emphasized that the use of the keypad 5 is not limited to a particular type of computer 2 but may be extended to a wide range of types, such as portable computer, PDA, or cellphone, as likewise it is not limited to input of a particular type of special graphic symbols (in the particular case illustrated herein, emoticons).
1. A key (6), configured to be coupled by means of a removable coupling to a keypad (5) associated with a processor (2) for inputting special graphic symbols, characterized by comprising a cap (30), having a lower edge designed to be positioned at an upper surface of said keypad (5) and defining a pair of recesses (32), designed to be engaged, in use, by an uncoupling element (17) for carrying out the uncoupling of said key (6) from said keypad (5).

2. The key according to claim 1, wherein said cap (30) has a symmetry axis (A), and said recesses (32) are arranged at diametrically opposite sides of said symmetry axis (A).

3. The key according to claim 1 or 2, wherein said cap (30) has a hollow hemispheric shape and an external touch portion depicting a respective one of said special graphic symbols; specifically, said special graphic symbols including emoticons.

4. The key according to any one of the preceding claims when depending on claim 2, further comprising a connecting element (40) interlocked with said cap (30), internally thereto; said connecting element (40) having a body (41) defining a transverse passage (42) extending along said symmetry axis (A), so that openings of said transverse passage (42) are arranged at said recesses (32).

5. The key according to claim 4, wherein said connecting element (40) has a first coupling portion (40a) for coupling with said cap (30), and a second coupling portion (40b) for coupling with said keypad (5), said second coupling portion (40b) being specular to said first coupling portion (40a) with respect to a horizontal transverse plane of said connecting element (40).

6. The key according to claim 5, wherein said lower edge of said cap (30) rests on said horizontal transverse
plane; and wherein said connecting element (40) has a tubular element (45) vertically protruding from said body (40), from opposite sides of said horizontal transverse plane.

7. A key assembly (6, 17), comprising a key (6) according to any one of the preceding claims, and said uncoupling element (17); said uncoupling element (17) being a clamp, having two arms (17a, 17b) each provided with a hook (18) designed to engage a respective one of said recesses (32), to carry out the uncoupling of said key (6) from said keypad (5).

8. A keypad (5), designed to be associated with a processor (2) for inputting special graphic symbols, comprising a base (14) carrying a plurality of housing elements (22); characterized by comprising a plurality of keys (6) according to any one of the preceding claims, each of said keys (6) being removably inserted into a respective one of said housing elements (22).

9. The keypad according to claim 8, wherein a seat (16) is provided inside said base (14), designed to retractably house said uncoupling element (17), in an operating condition; and wherein said uncoupling element (17) is a clamp, having two arms (17a, 17b) each provided with a hook (18) designed to engage a respective one of said recesses (32), for extracting said key (6) from the respective housing element (22).

10. The keypad according to claim 9, wherein said seat (16) is provided at two contiguous external faces of said base (14) defining an edge therebetween; and said uncoupling element (17) is configured to assume a first stable, open configuration within said seat (16), with the arms (17a, 17b) each extending along a respective one of said contiguous faces; and a second stable, closed configuration with the arms (17a, 17b) substantially parallel to each other.

11. The keypad according to claim 9 or 10, wherein said
uncoupling element (17) is provided with at least one gripping portion (19) arranged outside said base (14), when said uncoupling element (17) is retractably housed in said seat (16).

12. The keypad according to any one of the claims 8-11 when depending on claim 6, wherein each one of said housing elements (22) comprises a pair of vertical walls (22a), defining an insertion seat (23) therebetween, in which said tubular element (45) of said connecting element (40) is inserted.

13. An ornamental item (52; 52'), comprising a key (6) according to any one of claims 1-6, and a support (30'; 55); said key (6) being configured so as to be removably coupled to said support (30'; 55).

14. The ornamental item (52') according to claim 13 when depending on any one of claims 1-3, wherein said support (55) has a face (55a) provided with connecting means (60) designed to achieve said removable coupling with said key (6); and wherein said lower edge of said cap (30) abuts against said face (55a).

15. The ornamental item (52') according to claim 14, designed to make a jewel, wherein said support (55) is ring-shaped.

16. The ornamental item (52), according to claim 13 when depending on any one of claims 4-6, wherein said support (55) includes a further cap (30') being similarly shaped to said cap (30) of said key (6), and interlocked with said connecting element (40) to form a decorative element (50) of said ornamental item (52); said further cap (30') having respective recesses (32) arranged along said symmetry axis (A) and adjacent to said recesses (32) of said cap (30) at said openings of said transverse passage (42).

17. The ornamental item (52) according to claim 16,
wherein said decorative element (50) has a generally spherical shape, transversally crossed by said transverse passage (42).

18. The ornamental item (52) according to claim 16 or 17, further comprising a filiform element (54) extending into said transverse passage (42) through said recesses (32) of said cap (30) and further cap (30').

19. The ornamental item (52) according to claim 18, designed to make a jewel, and specifically a necklace, a bracelet, or an anklet, comprising a plurality of said decorative elements (50) crossed by said filiform element (54).

20. Use of a key (6) according to any one of claims 1-6, for making an ornamental item (52; 52') according to any one of claims 13-19.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

INV. G06F3/023 G06F3/02

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)

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<th>Category</th>
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<td>abstract; figures 2-5</td>
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Further documents are listed in the continuation of Box C.

See patent family annex.

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claimed 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

Date of the actual completion of the international search: 1 October 2009

Date of mailing of the international search report: 13/10/2009

Name and mailing address of the ISA:
European Patent Office, P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk
Tel: (+31-70) 340-0404
Fax: (+31-70) 340-3016

Authorized officer: Anticolor Claud
## DOCUMENTS CONSIDERED TO BE RELEVANT

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<th>Relevant to claim No.</th>
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<tr>
<td>A</td>
<td>US 5 757 292 A (AMRO HATIM YOUSEF [US] ; DAO DAN LE [US]; DODSON JOHN PAUL [US]) 26 May 1998 (1998-05-26) column 1, line 5 - column 2, line 16; figures 4, 6</td>
<td>1-20</td>
</tr>
<tr>
<td>A</td>
<td>GB 2 386 098 A (BENNETT NICHOLAS RUSSELL [GB]; AYNSLEY VICTORIA WATT [GB]) 10 September 2003 (2003-09-10) page 1, paragraph 1 - page 4, paragraph 2 page 5, paragraph 7; figures 1, 2, 5, 8, 9</td>
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</tr>
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<td>Citation of document, with indication, where appropriate, of the relevant passages</td>
<td>Relevant to claim No.</td>
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| A        | Andrew Tingle: "Look@Me Emoticon Mini Keypad"  
28 May 2008 (2008-05-28), XP002548219  
Retrieved from the Internet:  
[retrieved on 2009-09-29]  
the whole document | 1-20 |
<table>
<thead>
<tr>
<th>Patent document cited in search report</th>
<th>Publication date</th>
<th>Patent family member(s)</th>
<th>Publication date</th>
</tr>
</thead>
<tbody>
<tr>
<td>us 5757292 A1</td>
<td>26-05-1998</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>us 2002154038 A1</td>
<td>24-10-2002</td>
<td>JP 2003005889 A</td>
<td>08-01-2003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TW 222592 B</td>
<td>21-10-2004</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WO 03074279 A1</td>
<td>12-09-2003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CN 1711585 A</td>
<td>21-12-2005</td>
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<td></td>
<td>CN 101437195 A</td>
<td>20-05-2009</td>
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<tr>
<td></td>
<td></td>
<td>EP 1559092 A2</td>
<td>03-08-2005</td>
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<td>WO 2004042986 A2</td>
<td>21-05-2004</td>
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<tr>
<td></td>
<td></td>
<td>US 2006145943 A1</td>
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