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(54) Title: A MOBILE TELEPHONE
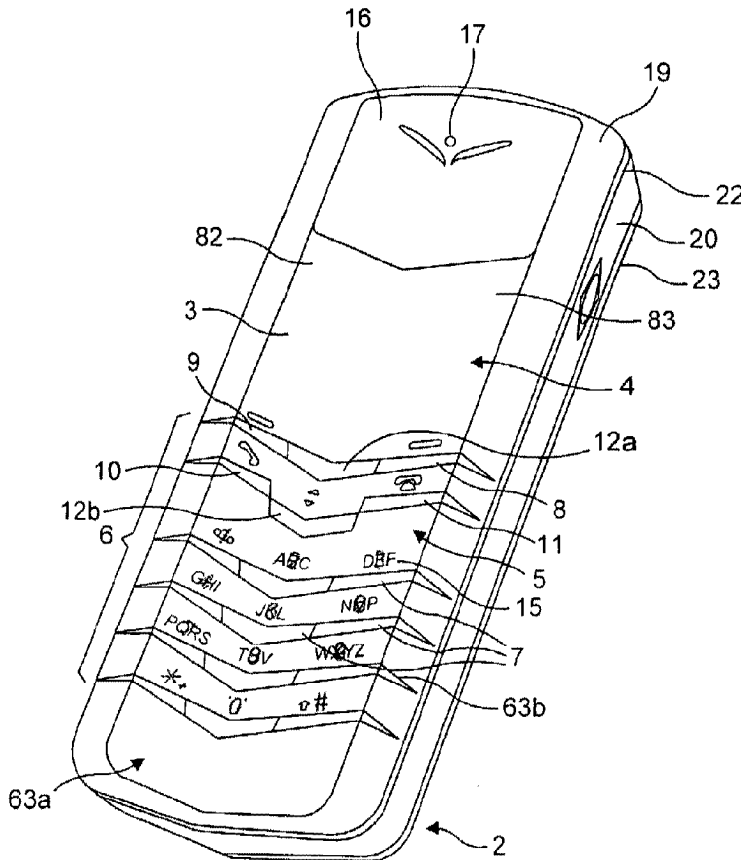
(57) Abstract: A hand held mobile telephone (1) is disclosed comprising a front face (3) having a longitudinal extension greater than a lateral extension and having a plurality of openings therein, and a multiplicity of keys (7-13) each having an upper surface bounded by side walls. Each key (7-13) protrudes from one of the plurality of openings to provide its upper surface for tactile actuation by a user and a plurality of said multiplicity of keys are arranged along a common first axis, in the longitudinal direction. Further, at least one of said plurality of keys has a vertex, in the boundary of its upper surface, aligned on said first axis.

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For two-letter codes and other abbreviations, refer to the "Guid-ance Notes on Codes and Abbreviations" appearing at the begin-ning of each regular issue of the PCT Gazette.

A mobile telephone

The present invention relates to a hand held mobile telephone, having an

5   adapted keypad.

There exists a problem in current mobile phones, which is exacerbated as the miniaturisation of mobile phones continues. It is not always easy for a user to orient themselves with respect to the keys on a mobile phone so that they can

10   quickly and accurately actuate a particular key.

It would be desirable to design a phone so that such orientation may be achieved effectively even as phones decrease in size.

15   It would be desirable for the design to allow orientation through the visual and tactile senses.

In the prior art a hand held mobile telephone generally comprised: a front face having a longitudinal extension greater than a lateral extension and having a

20   plurality of openings therein ; and a multiplicity of keys each having an upper surface bounded by side walls, wherein each key protrudes from one of the plurality of openings to provide its upper surface for tactile actuation by a user wherein a plurality of said multiplicity of keys are arranged along a common first axis, in the longitudinal direction. Typically a phone would have a 3 by 4

25   array (4 lateral rows and 3 longitudinal columns) of identical keys arranged for alphanumeric input.

In accordance with one aspect of the present invention, at least one of said plurality of keys has a vertex, in the boundary of its upper surface, aligned on

30   said first axis.

The vertex is generally formed where two portions of a side wall meet at a point. The vertex may feel like a pointed or V shaped protrusion, where the angle formed at the interior of the key between two side wall portions is less than 180 degrees. The vertex may feel like a V shaped recess to the side wall

5   where the angle formed at the interior of the key between the two side wall portions is more than 180 degrees. The key may be V-shaped having two vertexes. The first and second vertexes may have substantially the same orientation both being aligned with the first axis. The or each vertex provides a means for differentiating one key both visually and by touch from other keys

10   and thereby provides the user with an origin for orientation.

The plurality of keys may be aligned as a non-contiguous series of keys, the series extending longitudinally. Each of the plurality of keys in series may have a vertex in the boundary of its upper surface, aligned on said first axis.

15   Each of the keys may be V shaped. The series of aligned vertexes provides the user with an axis of orientation, which is sensible by touch and sight. Preferably the first axis bisects the width of the front face.

Visual sensibility may be improved if each of the plurality of keys aligned on

20   the first axis are identically shaped.

Visual sensibility may also be improved when said first axis is an axis of reflection symmetry, for each of said plurality of keys.

25   The first axis may be an axis of reflection symmetry for the multiplicity of keys. Thus orientation with respect to the first axis may provide orientation for all of the multiplicity of keys.

The multiplicity of keys may be arranged in rows extending laterally and

30   columns extending longitudinally, wherein each row comprises three keys including a central key, a left edge key to the left of the central key and a right edge key to the right of the central key, wherein the central key is one of said

plurality of keys. Each of the keys in a row may be contiguous, forming in combination a V shape, and the keys in a row may protrude through a single V shaped opening in the front face.

5   The user may quickly locate the central key by touch or sight, and will thereby be quickly able to locate the other keys.

The keys in a row may be contiguous and extend right across the front face, from one side of the front face to the other. The side edges of the face

10   therefore provide two axis for orientation.

Each left edge key may have a vertex in the boundary of its upper surface aligned with a second longitudinal axis, parallel to the first longitudinal axis. The second longitudinal axis may or may not form an axis of reflection

15   symmetry for the left edge keys. Each left edge key may have the same shape e.g. comprising an inverted V shape, which is different to the shape of the central keys.

Each right edge key may have a vertex in the boundary of its upper surface

20   aligned with a second longitudinal axis, parallel to the first longitudinal axis. The third longitudinal axis may or may not form an axis of reflection symmetry for the right edge keys. Each right edge key may have the same shape e.g. comprising an inverted V shape, which is different to the shape of the central and right edge keys.

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Thus it is possible for different axes of orientation to be identified by different shaped keys, each axis having similarly shaped keys. Thus an axis of orientation defined by the left edge keys may be distinguished from an axis of orientation defined by the central keys or the right edge keys.

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Embodiments of the invention will now be described in more detail with reference to Figures 1 to 25 of the accompanying drawings of which:

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