

(19) AUSTRALIAN PATENT OFFICE

(54) Title
Tactile Sign

(51)⁶ International Patent Classification(s)
G09B 21/00 (2006.01)1BHAU G09F
G09F 7/14 (2006.01) 7/14
G09B 21/00 20060101ALI2007053
20060101AFI2007053 1BHAU

(21) Application No: 2007100429

(22) Application Date: 2007.05.24

(43) Publication Date : 2007.06.28

(43) Publication Journal Date : 2007.06.28

(71) Applicant(s)
Michael Miscamble

(72) Inventor(s)
Miscamble, Michael Patrick20070628

(74) Agent/Attorney
Cullen & Co, Level 26 239 George Street, Brisbane, QLD, 4000

Abstract

A tactile sign 30 comprises a baseplate 31, and at least one character tile 32, 33 which is able to be securely mounted on the baseplate 31, wherein the at least one character tile 32, 33 includes at least one raised tactile character 34, 35.

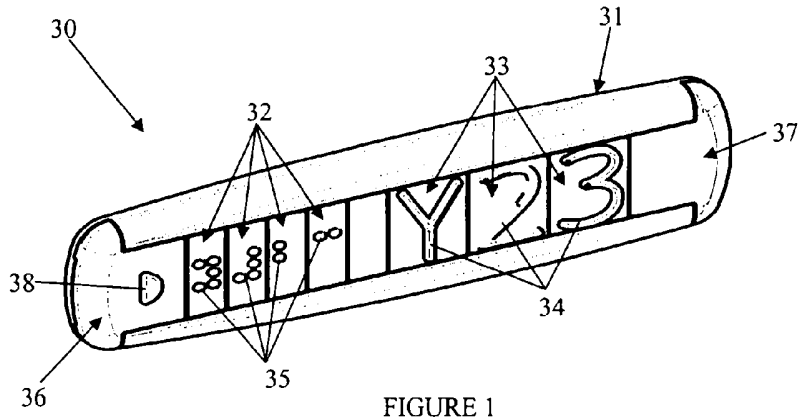


FIGURE 1

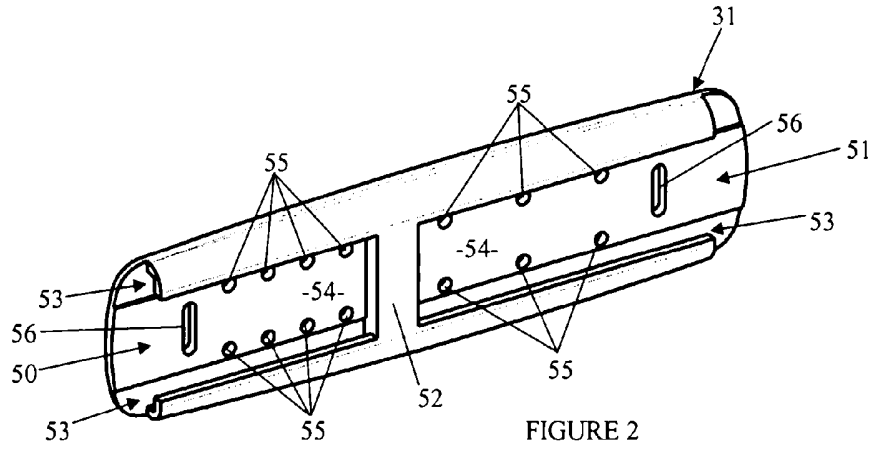


FIGURE 2

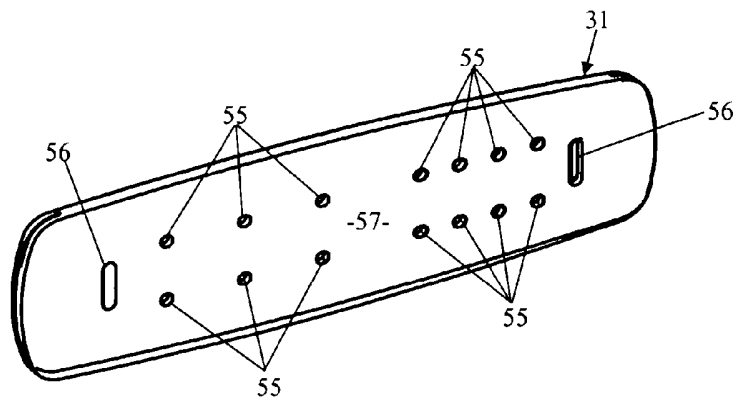


FIGURE 3

2007100429 24 May 2007

1

AUSTRALIA
Patents Act 1990

COMPLETE SPECIFICATION
FOR AN INNOVATION PATENT

Name of Applicant: Michael Patrick Miscamble

Actual Inventor: Michael Patrick Miscamble

Address for Service: CULLEN & CO.,
Patent & Trade Mark Attorneys,
239 George Street,
Brisbane, Qld. 4000,
Australia.

Invention Title: Tactile Sign

The following statement is a full description of this invention including the best method of performing it known to us:

Field of the Invention

The present invention relates generally to signs and, in particular, to tactile signs for visually impaired people.

5 Although the present invention will be described with particular reference to a tactile sign for displaying a taxi registration number so that the number can be read by taxi passengers who may or may not be visually impaired, it will be appreciated that the present invention is not limited to such tactile signs. For example, it may be used as a language education tool for people who may or may not be visually
10 impaired.

Brief Discussion of the Prior Art

In Australia, taxi operators are required to display their taxi registration number on their taxi so that it can be read by their passengers. Typically, their registration number must be prominently displayed on a tactile sign which can be
15 readily touched by their passengers so that visually impaired passengers are able to read the sign. To allow the number to be read by visually impaired and non-visually impaired passengers alike, the registration number is usually displayed on the sign as a series of raised tactile alphanumeric characters and as a series of Braille characters which are located to the left of the alphanumeric characters. Sometimes, the Braille
20 characters are omitted so that the registration number is only displayed on the sign as a series of raised tactile alphanumeric characters.

The Braille characters on many existing tactile taxi registration signs consist of one or more Braille balls which are secured to a support surface of the sign by an adhesive or other securing means. The tactile alphanumeric characters of those signs
25 are secured to the support surface in a similar manner. A problem with securing the Braille and alphanumeric characters to the support surface in this way is that the individual Braille balls and alphanumeric characters tend to detach from the support surface either as a result of general wear and tear, or as a result of vandals deliberately picking or levering the Braille balls or alphanumeric characters off the support
30 surface.

Many existing tactile taxi registration signs are coloured so that at least the

colour of their alphanumeric characters contrasts with that of other parts of the sign. The colours of many existing tactile signs are usually applied by screen printing appropriately coloured ink on to the surface of the sign. The quality of ink that is used for this purpose is typically such that the ink tends to fade over time, particularly when
5 exposed to ultraviolet light, and can be scratched off the sign with relative ease. Fading or scratched ink on any sign including a tactile sign can be unsightly, and can, depending upon the extent of fading or scratching, make the sign difficult to read. If the ink becomes too faded or too scratched, it is usually necessary to either apply fresh ink to the sign or to replace the sign with a new one.

10 Another problem with many existing taxi registration tactile signs is that specialist equipment is required to manufacture each sign. Also, once they have been made, many existing signs cannot be altered to change the number which they display, so that a completely new tactile sign must be manufactured if the number is changed.

Examples of various prior art signs are disclosed in Australian Patent Nos.
15 2002301400 and 2002317522, International Patent Application Publication Nos. WO02093348, WO0039403 and WO9429829, French Patent No. 2553551, and United States Patent Nos. 5504144, 5389413, 5428914, 5389413, 5246757 and 5246757. Examples of educational products that can be used for educational purposes to enhance learning for both sighted and visually impaired persons can currently be
20 found at the following Internet websites:

- www.jactoys.com.hk/show/educational_1.htm; and
- www.tack-tiles.com/index.htm.

Summary of the Invention

25 It is an object of the present invention to overcome, or at least ameliorate, one or more of the deficiencies of the prior art mentioned above, or to provide the consumer with a useful or commercial choice.

Other objects and advantages of the present invention will become apparent from the following description, taken in connection with the accompanying
30 illustrations, wherein, by way of illustration and example, a preferred embodiment of the present invention is disclosed.

According to a broad aspect of the present invention there is provided a tactile sign comprising a baseplate, and at least one character tile which is able to be securely mounted on the baseplate, wherein the at least one character tile includes at least one raised tactile character.

5 Advantageously, the sign may be assembled by an end user or a sign manufacturer without having to use specialist equipment.

 The baseplate may be any suitable size and shape, and may be fabricated from any suitable material or combination of materials. Preferably, the baseplate is fabricated from plastic. In a particular preferred form, the baseplate is fabricated
10 using a solid plastic injection moulding process. The baseplate is preferably flexible or rigid.

 The baseplate preferably includes at least one recess for receiving the at least one character tile. It is particularly preferred that the baseplate has two recesses. One of the recesses may receive a character tile which includes a first type of tactile
15 character, and the other recess may receive a character tile which includes a second type of tactile character. For example, one of the recesses may receive a character tile which includes a raised tactile Braille character, and the other recess may receive a character tile which includes a raised tactile alphanumeric character. The recess which may be used for receiving Braille character tiles is preferably located on the left
20 of the recess which may be used for receiving alphanumeric character tiles. The recesses are preferably of different sizes. The recess which may be used for receiving Braille character tiles is preferably narrower than the recess which may be used for receiving alphanumeric character tiles, and is preferably shorter than the recess which may be used for receiving alphanumeric character tiles. The recesses may be separate
25 from each other or joined together.

 Each recess may extend from an end of the baseplate so that each tactile character tile can slide into the recess from the end of the baseplate which the recess extends from. The tactile sign may also include at least one retaining tile for preventing each character tile from falling out of each recess. Each retaining tile
30 preferably includes a main portion, a plurality of tongue portions extending from the main portion, and a locating projection. Each retaining tile may also include an

enlarged end portion for abutting against the baseplate. There is preferably at least one retaining tile which includes a Braille locator.

In one particular preferred form, the baseplate includes a groove in each recess for receiving the at least one character tile. In another particular preferred
5 form, the baseplate includes a pair of such grooves in each recess, and the grooves are preferably located on opposite sides of each recess. It is preferred that each groove extends the length of the recess that it is located in.

Preferably, the baseplate includes at least one locating aperture in each recess. Each locating aperture may be any suitable size and shape. For example, the
10 locating apertures may be circular or elongate. Each locating aperture preferably extends all of the way through the baseplate.

The baseplate may include a Braille locator, particularly if the raised tactile character of the at least one character tile is a Braille character.

The baseplate may be secured relative to a support in any suitable manner.
15 For example, the baseplate may be secured relative to a support surface with double-sided adhesive tape or some other suitable securing means.

Each character tile may be any suitable size and shape, and may be fabricated from any suitable material or combination of materials. Preferably, each character tile is fabricated from plastic. In a particular preferred form, each character tile is
20 fabricated using a solid plastic injection moulding process. Each character tile is preferably flexible.

In one particular preferred embodiment, each character tile includes a main portion and a pair of tongue portions extending from the main portion. The tongue portions are preferably offset with respect to the main portion. Each tongue portion
25 preferably has at least one bevelled edge. In another particular preferred embodiment, each character tile includes a main portion and a single tongue portion extending from the main portion. The single tongue portion which extends from the main portion preferably has a rounded profile. Each character tile is preferably tapered. Preferably, each character tile has at least one locating projection.

30 The raised tactile character of the at least one character tile may be any desired character or symbol. For example, the raised tactile character may be a Braille

character or an alphanumeric character. All alphanumeric and other non-Braille characters are preferably 15 mm tall, raised by 1 mm to 1.5 mm, and have rounded edges. In the case of Braille characters, the Braille dots which form the characters are preferably raised by 0.8 mm and have a domed shaped. If the tactile sign includes
5 both Braille and non-Braille characters, it is preferred that the Braille characters are displayed to the left of the other characters. If the tactile sign includes a Braille locator, the locator is preferably 6 mm high, raised by 1 mm, and has rounded edges.

It is preferred that each raised tactile character is moulded, co-moulded, over-moulded or doubled-shot moulded with the rest of the character tile. This is
10 preferably done without drilling, engraving, etching, or embossing into the surface of the at least one character tile.

The tactile sign is preferably coloured so that the colour of the at least one raised tactile character contrasts with the colour of other parts of the at least one character tile. It is particularly preferred that the tactile sign is coloured so as to
15 provide luminance-contrast of each tactile character. If, for example, the tactile sign is for displaying the taxi registration number of a taxi, the colours of the sign may be the same as the company colours of the taxi. The sign may be moulded to PMS (Pantone Matching System) colours.

Preferably, the colour of each tactile character may be provided by co-
20 moulding, over-moulding or doubled-shot moulding each character in a particular colour with the rest of the at least one character tile which has a different colour.

Alternatively, the colour of each tactile character may be provided by screen printing a suitably coloured ink on the surface of each character. Preferably, high quality and UV stable exterior inks are used. The particular printing process which is
25 used may, for example, be a pad printing or a 3D printing process.

Each character tile may have any suitable profile. Preferably, the profile of each character tile is such that each character tile cannot fall out of the baseplate once the tactile sign has been assembled.

The character tiles may be securely mounted on the baseplate without the
30 need to adhere the tiles to the baseplate.

The tactile sign may have a side loading, top loading or rear loading design to

ensure each individual tile is secure to the baseplate. In the side loading design, each character tile is able to be mounted on the baseplate by sliding the character tile into the baseplate from a side or end of the baseplate. In the case of the top loading design, each character tile is able to be mounted on the baseplate by placing the character tile directly on top of the baseplate in the desired position. In the rear loading design, each character tile is able to be mounted on the baseplate from the rear of the baseplate.

The tactile sign may be for exterior or interior use. For example, the tactile sign may be mounted in the interior or on the exterior of a vehicle, or it may be mounted on an exterior or an interior wall which does not belong to a vehicle.

The various components of the tactile sign, including the baseplate and the character tiles, may be sonically or chemically welded together to fuse the components into a single solid sign.

The tactile sign may be provided to customers as an unassembled kit which includes the baseplate and a range of character tiles which have various alphanumeric, Braille or other raised tactile characters on them. The customer can then select those character tiles which have the tactile characters which they require, and then mount those character tiles themselves on the baseplate to produce the tactile sign which they require.

Brief Description of the Illustrations

In order that the invention may be more fully understood and put into practice, a preferred embodiment thereof will now be described with reference to the accompanying illustrations, in which:

Figure 1 is a perspective view of a tactile sign according to a first preferred embodiment of the present invention;

Figure 2 is a perspective view of the baseplate which forms part of the tactile sign depicted in figure 1;

Figure 3 is a reverse perspective view of the baseplate depicted in figure 2;

Figure 4 is a front view of the baseplate depicted in figure 2;

Figure 5 is a bottom view of the baseplate depicted in figure 4;

Figure 6 is an end view of the baseplate depicted in figure 4;

Figure 7 is a perspective view of one of the character tiles of the tactile sign depicted in figure 1;

Figure 8 is a front view of the character tile depicted in figure 7;

5 Figure 9 is an end view of the character tile depicted in figure 7;

Figure 10 is a rear view of the character tile depicted in figure 7;

Figure 11 is a bottom view of the character tile depicted in figure 7;

Figure 12 is a front view of various alphanumeric and Braille character tiles which are able to be mounted on the baseplate depicted in figure 2;

10 Figure 13 is an exploded perspective view of the tactile sign depicted in figure 1;

Figure 14 is an exploded reverse perspective view of the tactile sign depicted in figure 1;

15 Figure 15 is a perspective view of a tactile sign according to a second preferred embodiment of the present invention;

Figure 16 is a perspective view of part of a tactile sign according to a third preferred embodiment of the present invention;

Figure 17 is a perspective view of the baseplate of the tactile sign depicted in figure 16;

20 Figure 18 is a perspective view of the character tile which is mounted on the baseplate of the tactile sign depicted in figure 16;

Figure 19 is a rear view of the left-hand portion of the part of the tactile sign depicted in figure 16;

25 Figure 20 is a front view of a tactile sign according to a fourth preferred embodiment of the present invention;

Figure 21 is a front view of the baseplate which forms part of the tactile sign depicted in figure 20;

Figure 22 is a front view of the various alphanumeric and Braille character tiles which form part of the tactile sign depicted in figure 20;

30 Figure 23 is an exploded bottom elevation of the tactile sign depicted in figure 20;

Figure 24 is a front view of a tactile sign according to a fifth preferred embodiment of the present invention; and

Figure 25 is a front view of all of the various components of the tactile sign depicted in figure 24 when the sign is unassembled.

5

Detailed Description of the Illustrations

Referring to figure 1, a tactile sign 30 according to a first preferred embodiment of the present invention comprises a baseplate 31, and a plurality of character tiles 32, 33 which are securely mounted on the baseplate 31. Each character tile 33 has a respective raised tactile alphanumeric character 34, and each character tile 32 has a respective raised tactile Braille character 35. The Braille characters 35 are equivalent to the alphanumeric characters 34. In particular the leftmost Braille character 35 of the sign 30 corresponds to the alphanumeric character 33 which represents the letter "Y", the next Braille character 35 is a special character which indicates that the Braille character 35 which follows it is a number, and the last two Braille characters 35 of the sign 30 are the Braille equivalent of the numbers "2" and "3", respectively.

End retaining tiles 36, 37 are securely mounted on the baseplate 31 at opposite ends thereof. The retaining tiles 36, 37 prevent the character tiles 32, 33 from falling out of the ends of the baseplate 31. The retaining tiles 36, 37 are identical to each other except that the retaining tile 36 has a raised tactile Braille locator 38. The Braille locator 38 signifies that a Braille message follows it.

Except for the raised tactile characters 34, 35 and the Braille locator 38 all other visible surfaces of the tactile sign 30 are smooth and flush with each other. Moreover, there are no gaps between the character tiles 32, 33, retaining tiles 36, 37 and the baseplate 31 so that dirt or other foreign matter cannot collect between those various components. Furthermore, the tactile sign 30 has smooth rounded edges. These features help to make the sign 30 a safe and hygienic tactile sign for use by visually impaired users.

Referring to figures 2 to 5, the baseplate 31 has a first recess 50 located adjacent to the left-hand end of the baseplate 31. In addition, the baseplate 31 has a

second recess 51 which is located adjacent to the right-hand end of the baseplate 31, and which is slightly longer than the first recess 50. The first recess 50 and the second recess 51 are separated from each other by a separating portion 52. Both recesses 50, 51 have a pair of grooves 53 which extend lengthwise along opposite sides of the recesses 50, 51. Each recess 50, 51 also has a raised central portion 54 which extends the length of the recess 50, 51. A plurality of circular character tile locating apertures 55, and an elongate retaining tile locating aperture 56 are located in the central portion 54 of each recess 50, 51 and extend through to a flat rear surface 57 of the baseplate 31. The baseplate 31 has rounded edges and is tapered which helps liquid to run-off the baseplate 31.

Referring to figures 7 to 11, each alphanumeric character tile 33 has a main portion 60. The main portion 60 has substantially flat and smooth front and rear surfaces 61, 62. The raised tactile alphanumeric character 34 of each tile 33 extends from the front surface 61, and a pair of circular locating projections 63 extends from the lower surface 62. The Braille characters 35 have a rounded or dome-shaped profile, and the raised tactile alphanumeric characters or symbols 34 have an egg-shaped profile which results in them having a smooth thin ridgeline that can be easily felt by blind or visually impaired users to identify the tactile alphanumeric characters or symbols and distinguish them from the Braille characters 35.

A respective tongue portion 64 extends from the top and bottom of the main portion 60. As can be seen in figure 9, the tongue portions 64 are offset with respect to the main portion 60. Each tongue portion 64 has a beveled left-hand end edge 65.

The character tile 33 has sides 66, 67 which are inclined relative to each other so that the tile 33 has a tapered appearance. The taper helps to ensure a precise and flexible fit between the tiles 33 and the baseplate 31.

The Braille character tiles 32 have all of the features of the alphanumeric character tiles 33 except, of course, the Braille character tiles 32 have raised tactile Braille characters 35 rather than alphanumeric characters. The Braille character tiles 32 are also slightly narrower than the alphanumeric character tiles 33, and the beveled edges 65 of the Braille character tiles 32 are on the right-hand end rather than the left-hand end of their tongue portions 64.

Figure 12 depicts various character tiles 32, 33 that are able to be securely mounted on the baseplate 31 to produce a desired sign. The tiles 32, 33 may have characters or symbols which are not depicted in figure 12. The character tile 33 for the number "6" can also be used as the character tile 33 for the number "9".

5 Consequently, the tongue portions 64 of that tile 33 have beveled edges 65 on both their left-hand end and their right-hand end edges. Any combination or permutation of up to three alphanumeric character tiles 33, and any combination or permutation of up to four Braille character tiles 32 may be securely mounted on the baseplate 31. Also, more than one particular type of alphanumeric or Braille character tile 32, 33

10 may be mounted on the baseplate 31.

With reference to figures 13 and 14, the Braille character tiles 32 of the sign 30 depicted in figure 1 are mounted on the baseplate 31 by sequentially sliding them into the recess 50. Each tile 32 is inserted into the left-hand end of the recess 50 so that each tongue portion 64 of each tile 32 is received by a respective groove 53 of the

15 recess 50, and so that the Braille character 35 on the tile 32 faces away from the baseplate 31 and is correctly oriented relative to the baseplate 31 (i.e. is the right way up). The tile 32 is then slid along the recess 50 until the tile 32 abuts against either the separating portion 52 of the baseplate 31 or another tile 32 which was previously

20 inserted into the recess 50. To assist in maintaining the tiles 32 in position, each locating projection 63 of each tile 32 is received by a respective locating aperture 55. The portions of the baseplate 31 which overlie the tiles 32, 33 force the locating projections 63 of the tiles 32, 33 into the locating apertures 55.

After all of the required Braille character tiles 32 have been inserted into the recess 50 and slid to the correct position along the recess 50, the retaining tile 36 is

25 then inserted into the recess 50. The retaining tile 36 is similar to the character tiles 32, 33 except that it does not have circular locating projections 63. Instead, the retaining tile 36 has an elongate locating projection 68 as depicted in figure 14. Also, unlike the character tiles 32, 33, the retaining tile 36 has an enlarged end portion 69. The retaining tile 36 is inserted into and slid along the recess 50 in a similar manner to

30 the tiles 32 until its enlarged end portion 69 abuts against the baseplate. Upon reaching this position, the locating projection 68 of the tile 32 is received by the

locating aperture 56 so that the retaining tile 36 is thereby retained in the recess 50. In particular, the portions of the baseplate 31 which overlie the tiles 36, 37 force the locating projections 68 into the locating apertures 56. Once the retaining tile 36 has been mounted on the baseplate 31, it is able to prevent the character tiles 32 from sliding out of the left-hand end of the recess 50.

The alphanumeric character tiles 33 of the sign 30 are mounted on the baseplate 31 in the same manner as described in connection with the character tiles 32. However, instead of being mounted in the recess 50, the tiles 33 are mounted in the recess 51. The tiles 33 are retained in the recess 51 by the retaining tile 37. The retaining tile 37 is identical to the retaining tile 36 except that it does not have a Braille locator 38.

The design of the individual tiles 32, 33, 36, 37 is such that they fit precisely into the baseplate 31 so that a mechanical fit occurs between the tiles 32, 33, 36, 37 and the baseplate 31, and so that the tiles 32, 33, 36, 37 are kept in place without having to use adhesives or specialist equipment such as, for example, sonic welding equipment.

To remove the character tiles 32, 33 from the baseplate 31, a screwdriver or other suitable implement must first be used to push the locating projections 68 out of locating apertures 56 so that the retaining tiles 36, 37 can be removed from the baseplate 31 by sliding them out of the recesses 50, 51. Once the retaining tiles 36, 37 have been removed, the screwdriver or other implement is then used to push the locating projections 63 out of the locating apertures 55 so that the character tiles 32, 33 can be removed from the baseplate 31 by sliding them out of the recesses 50, 51.

The sign 30 may be attached to a support in any suitable manner. For example, double-sided adhesive tape may be used to secure the baseplate 31 to a support surface. The tape would typically be secured to the rear surface 57 of the baseplate 31 and to the support surface.

A tactile sign 80 according to a second preferred embodiment of the present invention is depicted in figure 15. For convenience, like features of the signs 30, 80 are referenced using the same reference numerals.

The tactile sign 80 is similar to the tactile sign 30 except that five

alphanumeric character tiles 33 and six Braille character tiles 32 are able to be mounted on the baseplate 31 of the sign 80. The Braille characters 35 on the left-hand side of the sign 80 are equivalent to the alphanumeric characters 34 on the right-hand side of the sign 80.

5 Figure 16 depicts a tactile sign 90 according to a third preferred embodiment of the present invention. The sign 90 comprises a baseplate 91, and a character tile 92 which is securely mounted on the baseplate 91. The character tile 92 has a raised tactile Braille character 93.

10 Referring to figure 17, the baseplate 91 has a first recess 100 located adjacent to the left-hand end of the baseplate 91. A second recess 101 is located adjacent to the right-hand end of the baseplate 91. The first recess 100 and the second recess 101 are separated from each other by a separating portion 102. Each of the recesses 100, 101 has a groove 103 which extends lengthwise along the recess 100, 101. A plurality of circular locating apertures 104 are located at the bottom of the recess 100, and a
15 plurality of circular locating apertures 105, which are slightly larger than the apertures 104, are located at the bottom of the recess 101. The locating apertures 104, 105 extend all of the way through the baseplate 91. A raised tactile Braille locator 106 extends from a front surface 107 of the baseplate 91, and is located adjacent to the first recess 100.

20 Referring to figure 18, the character tile 92 has a generally flat main portion 110 which has substantially flat and smooth front and rear surfaces 111, 112. The raised Braille character 93 protrudes from the front surface 111, and a locating projection 113 extends from the lower surface 112. The main portion 110 includes a tongue portion 114 which has a rounded profile and which is located at the top of the
25 main portion 110. The main portion 110 also has a beveled edge 115 which is located at the bottom of the main portion 110.

30 Referring to figure 19, the character tile 92 is mounted on the baseplate 91 in the manner depicted in figure 16 by firstly inserting its tongue portion 114 into the groove 103 and then inserting the locating projection 113 into the leftmost locating aperture 104 in the recess 100. The locating apertures 104 and the locating projection 113 are dimensioned so that the locating projection 113 is able to fit tightly in any of

the locating apertures 104. The tight fit helps to secure the character tile 92 relative to the baseplate 91 and inhibit removal of the tile 92 from the baseplate 91.

Although the tactile sign 90 depicted in figures 16 and 19 only has a single character tile 92 mounted on the baseplate 91, the sign 90 can have up to six Braille character tiles 92 mounted in the recess 100, and up to five alphanumeric character tiles (not depicted) mounted in the recess 101.

The alphanumeric character tiles which can be mounted on the baseplate 91 are similar to the Braille character tiles 92. The alphanumeric character tiles differ from the Braille character tiles 92 in that they have raised tactile alphanumeric characters instead of Braille characters. Also, the alphanumeric character tiles are wider than the Braille character tiles 92, and have a locating projection which is larger than the locating projection 113 of the Braille character tiles so that the locating projections of the alphanumeric character tiles are able to fit tightly in the larger locating apertures 105.

Each Braille character tile 92 which is mounted on the baseplate 91 can have any desired raised tactile Braille character. Likewise, each alphanumeric character tile which is mounted on the baseplate 91 can have any desired raised tactile alphanumeric character. The character tiles 92 may also have characters other than Braille characters or alphanumeric characters.

The tactile sign 90 is designed so that when six Braille character tiles 92 and five alphanumeric character tiles are mounted on the baseplate 91, all visible surfaces on the front of the sign 90, except for the raised tactile Braille and alphanumeric characters, are smooth and are also flush with each other. Also, there are no gaps between the character tiles and the baseplate 91 so that dirt or other foreign matter cannot collect between those components. Moreover, the sign 90 does not have any sharp corners on its front surface.

Figure 20 depicts a tactile sign 120 according to a fourth preferred embodiment of the present invention. The sign includes a baseplate 121 which has a flat and smooth front surface 122, and rounded corners. A Braille locator 123 extends from the front surface 122, and is located adjacent the left-hand end of the baseplate 121. A plurality of Braille and alphanumeric character tiles are mounted on the

baseplate 121. Each Braille character tile has a single raised tactile Braille character 124, and each alphanumeric character tile has a single raised tactile alphanumeric character 125. The Braille characters 124 of the sign 120 are equivalent to the alphanumeric characters 125. Any desired combination or permutation of Braille and/or alphanumeric characters may be mounted on the baseplate 121.

Figure 21 depicts the baseplate 121 without the character tiles mounted thereon. In addition to the features mentioned previously, the baseplate 121 also has a recess 126 for receiving the Braille character tiles, and a wider recess 127 for receiving the alphanumeric character tiles. The recesses 126, 127 are joined together.

The Braille character tiles 128 and the alphanumeric character tiles 129 which are mounted on the baseplate 121 are depicted in figure 22. Figure 23 depicts how the character tiles 128, 129 are mounted on the baseplate 121, and also clearly shows that the characters 124, 125 are raised tactile characters. Each of the character tiles 128, 129 has a common base colour, and a high luminance-contrast raised colour for the characters 124, 125.

Before the sign 120 can be assembled, the desired Braille and alphanumeric character tiles 128, 129 are selected and are appropriately placed in the recesses 126, 127. The design of the tiles 128, 129 is such that the tiles 128, 129 interlock with each other when they are inserted into the recesses 126, 127 in such a way that ensures a tight, precise fit. The baseplate 121 and the tiles 128, 129 are then chemically welded together to produce the finished, flexible, solid plastic tactile sign 120. The finished sign 120 has no edges or gaps which would allow the tiles 128, 129 to be lifted and removed from the baseplate 121.

Figure 24 depicts a tactile sign 140 according to a fifth preferred embodiment of the present invention. The sign 140 is similar to the sign 80. Therefore, for convenience, like features of the signs 80 and 140 are referenced using the same reference numerals.

The most significant difference between the two signs 80, 140 is that the retaining tiles 36, 37 of the sign 140 do not have enlarged end portions 69. The various components of the sign 140 are sonically welded together to produce the single-piece sign 140.

The various components of the tactile signs described herein are preferably made using a solid plastic injection moulding process. The various components may be fabricated from any suitable plastic. For example, the components may be fabricated from pre-made laminates or cast acrylics which are used in the engraving and sign industries. Alternatively, the components may be fabricated from plastics which are not commonly used in the engraving and sign industries. The plastic from which the components are fabricated is preferably a flexible plastic.

The process of fabricating the various components of the signs preferably involves the use of specific tooling and moulding procedures to ensure that each character tile will have a precise fit with the baseplates of the signs without shrinkage or warping occurring.

The colour of the characters or symbols of the character tiles preferably contrasts with the base colour of the other parts of the character tiles. This colour contrast may be achieved, for example, by co-moulding, over-moulding or doubled-shot moulding the contrasting colour through the base colour of the tile. The process of co-moulding, over-moulding or doubled-shot moulding is able to provide a solid colour contrast of the characters into the base colour of the injection moulded portion of the character tiles.

The various components of the tactile signs may be moulded to PMS (Pantone Matching System) colours if required.

The tactile signs may be interiorly or exteriorly mounted using double-sided adhesive tape or any other suitable securing means.

Throughout the specification and the claims, unless the context requires otherwise, the term "comprise", or variations such as "comprises" or "comprising", will be understood to apply the inclusion of the stated integer or group of integers but not the exclusion of any other integer or group of integers.

Throughout the specification and claims, unless the context requires otherwise, the term "substantially" or "about" will be understood to not be limited to the value for the range qualified by the terms.

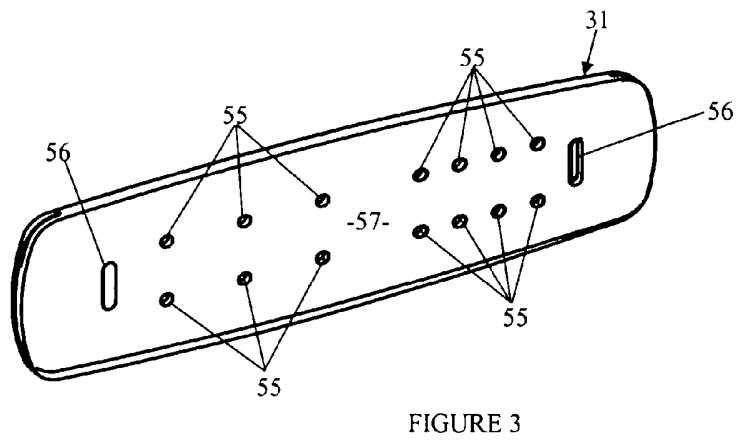
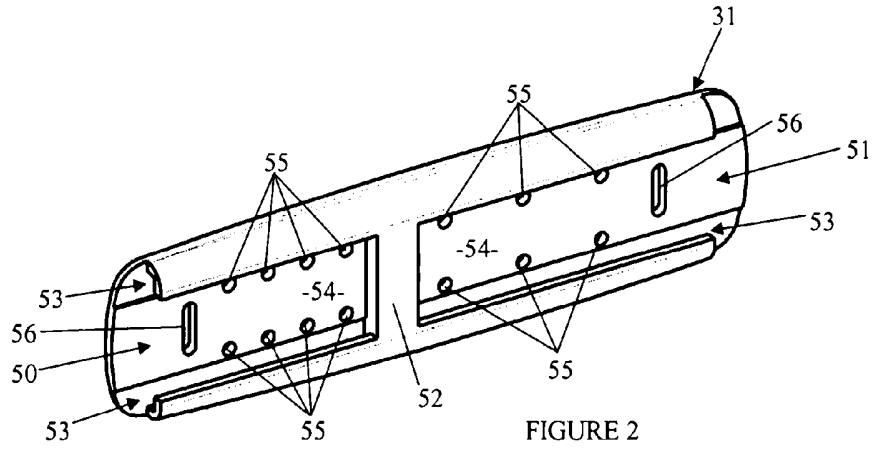
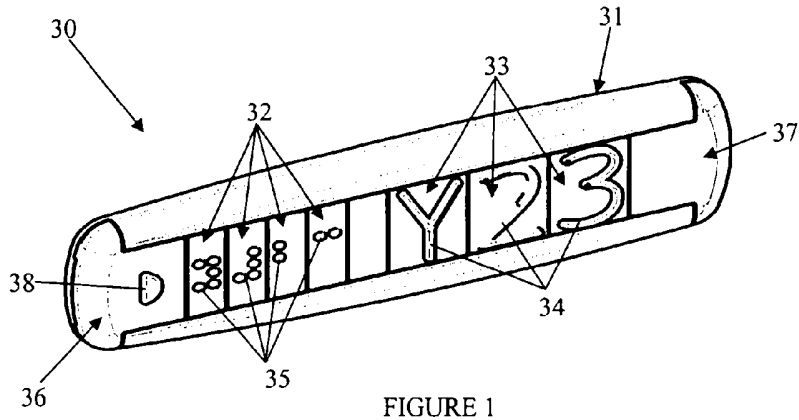
It will be appreciated by those skilled in the art that variations and modifications to the invention described herein will be apparent without departing

from the spirit and scope thereof. The variations and modifications as would be apparent to persons skilled in the art are deemed to fall within the broad scope and ambit of the invention as herein set forth.

5 It will be clearly understood that, if a prior art publication is referred to herein, that reference does not constitute an admission that the publication forms part of the common general knowledge in the art in Australia or in any other country.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A tactile sign comprising a baseplate, and at least one character tile which is able to be securely mounted on the baseplate, wherein the at least one character tile includes at least one raised tactile character.
2. The tactile sign of claim 1, wherein the baseplate and at least one character tile are injection moulded.
3. The tactile sign of claim 2, wherein the at least one raised tactile character is co-moulded, over-moulded or doubled-shot moulded.
4. The tactile sign of any one of the preceding claims, wherein the baseplate includes at least one recess for receiving the at least one character tile, at least one groove in the recess for retaining the at least one character tile in the recess, and at least one locating aperture, and the at least one character tile further includes at least one tongue portion for insertion into the at least one groove, and at least one locating projection for insertion into the at least one locating aperture.
5. A tactile sign substantially as herein described with reference to figures 1 to 14; figure 15; figures 16 to 19; figures 20 to 23; and figures 24 to 25 of the drawings.



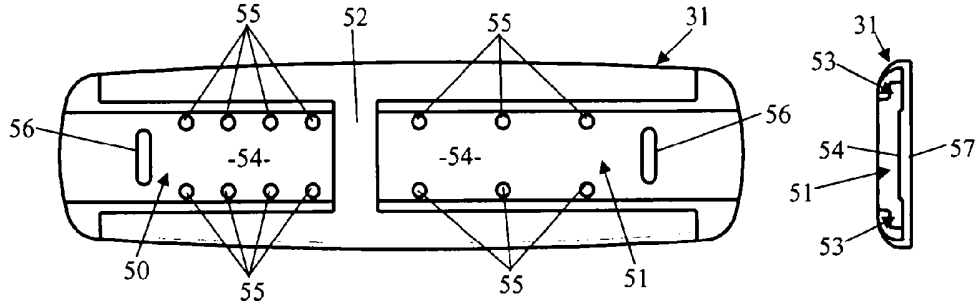


FIGURE 4

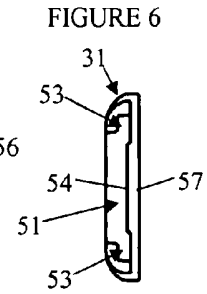


FIGURE 6

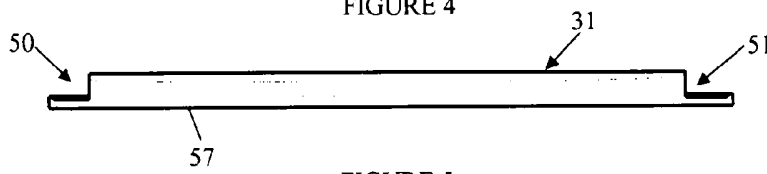


FIGURE 5

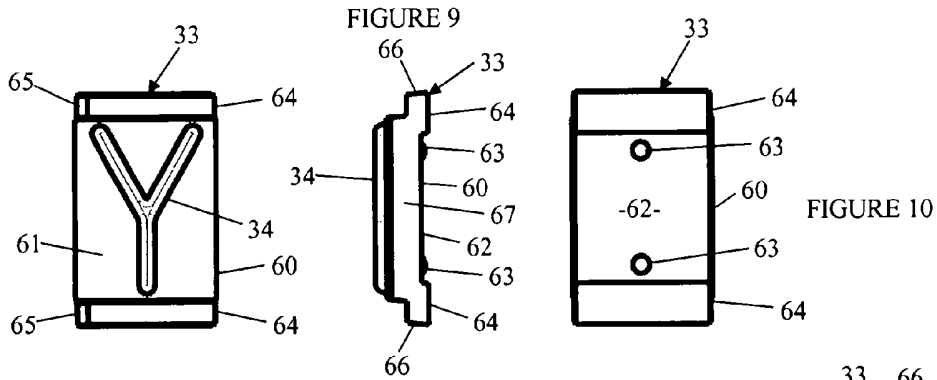


FIGURE 9

FIGURE 10

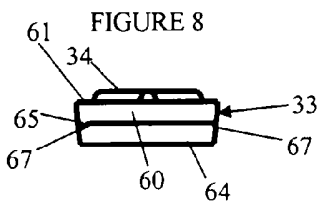


FIGURE 8

FIGURE 11

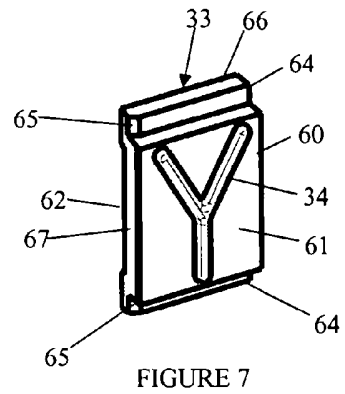


FIGURE 7

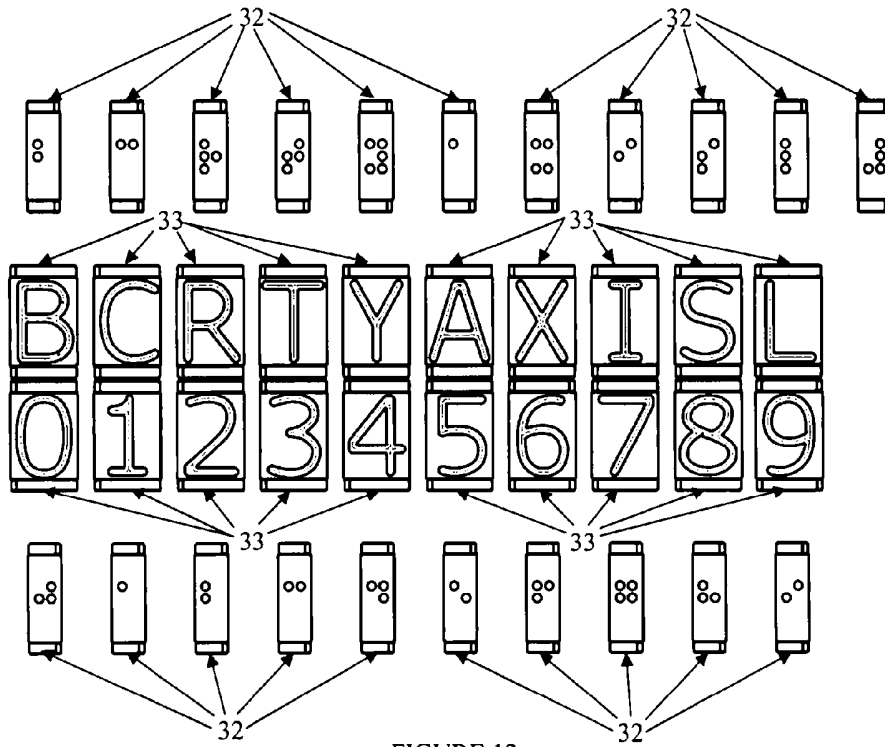


FIGURE 12

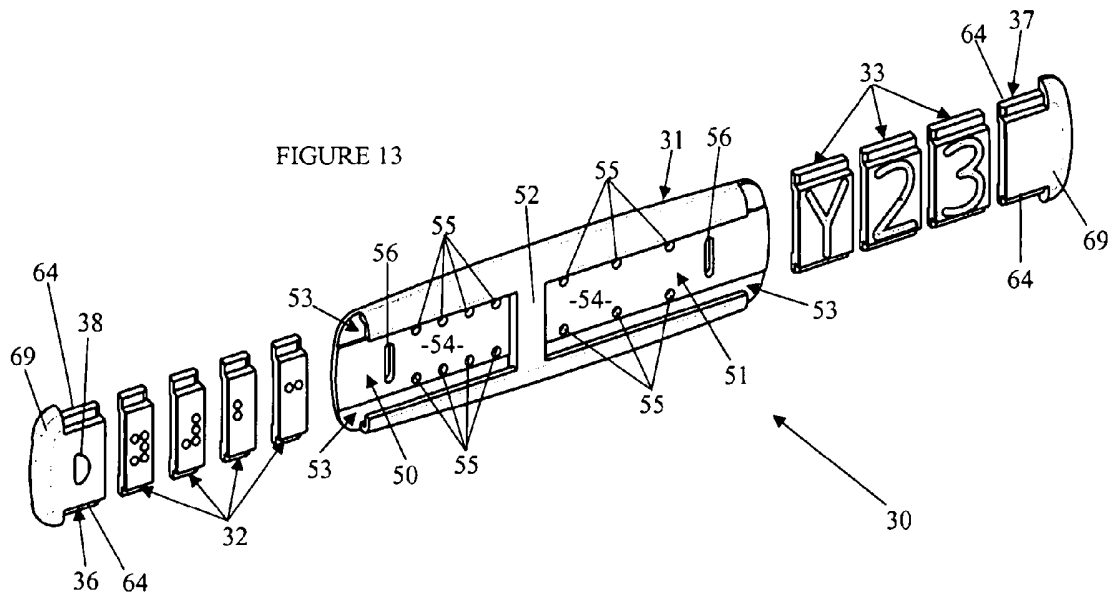
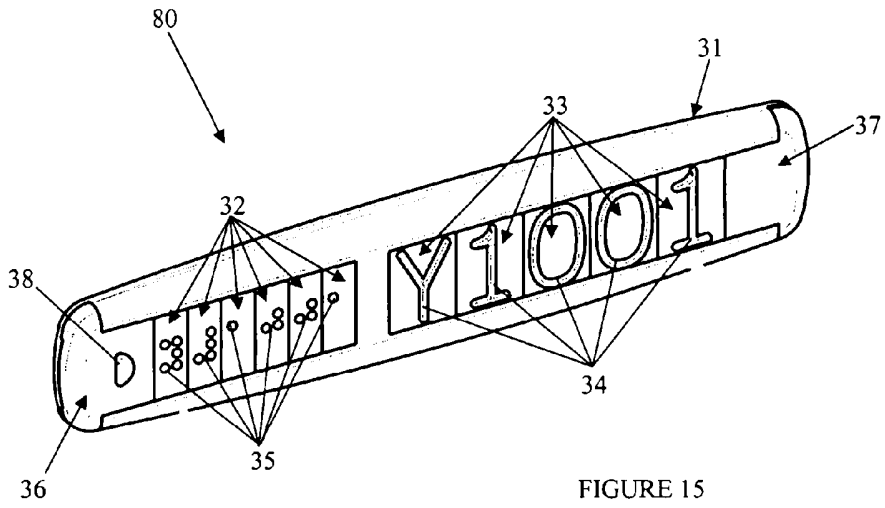
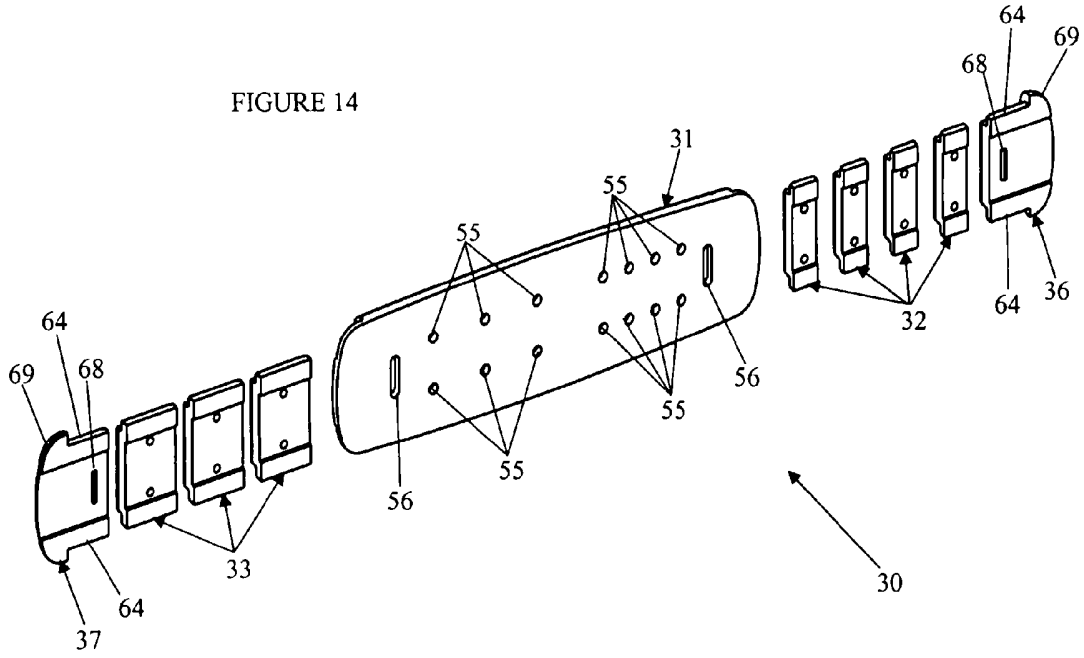
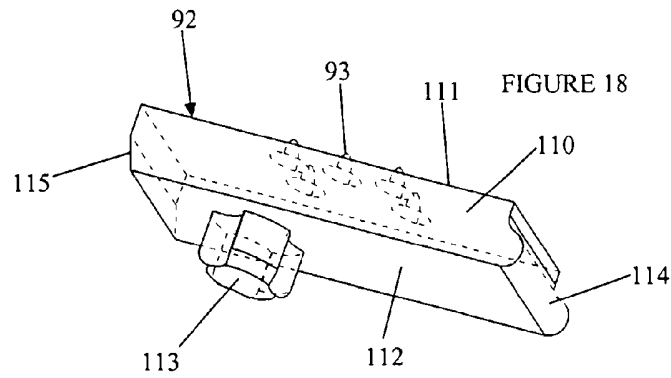
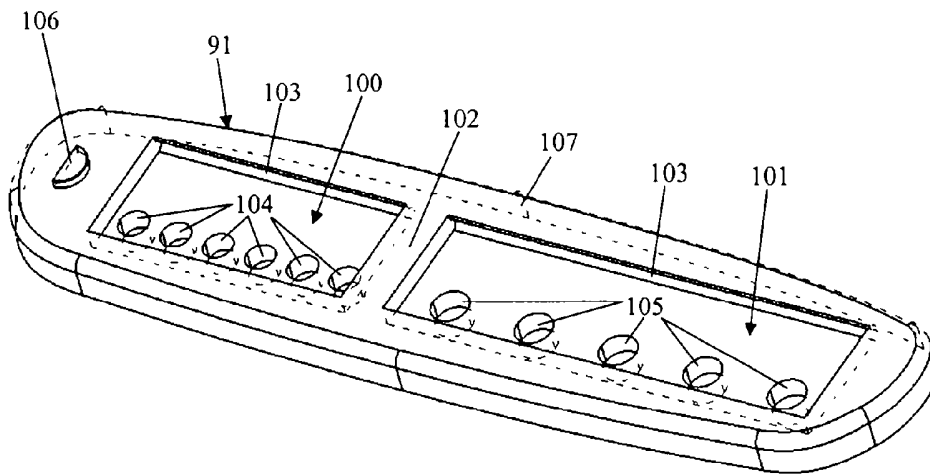
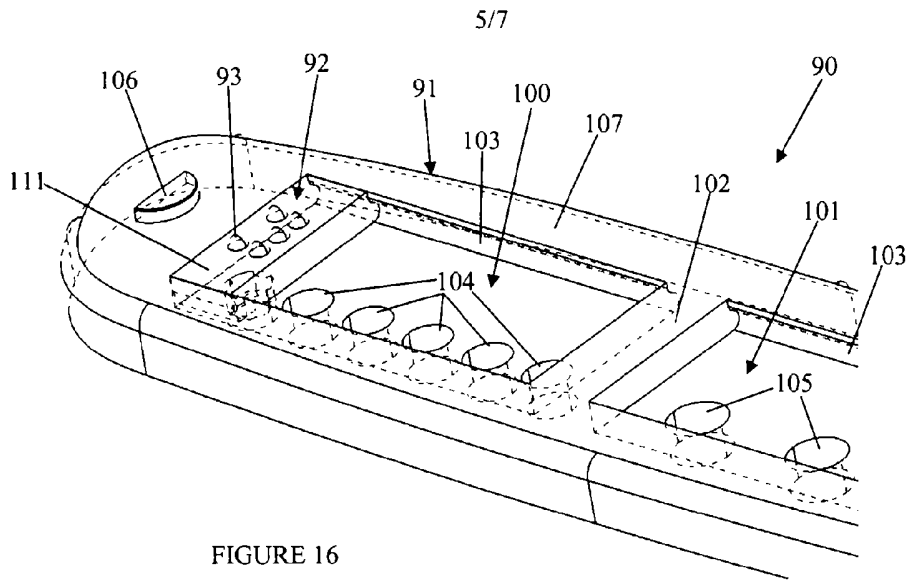
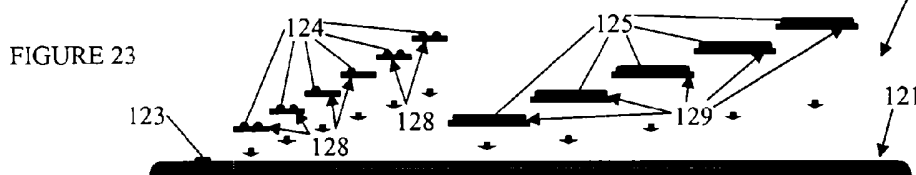
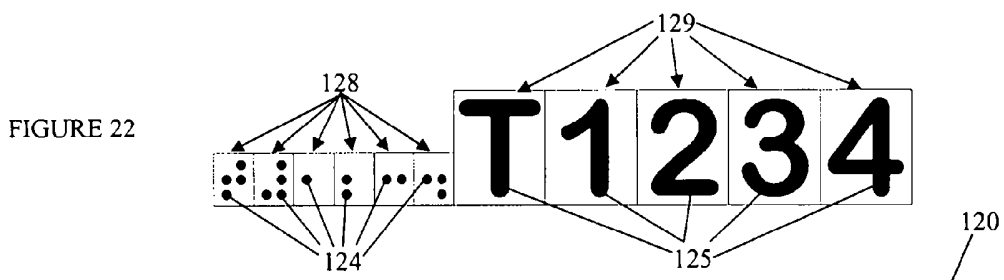
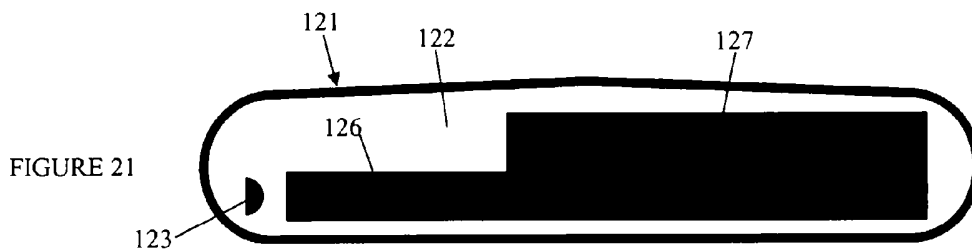
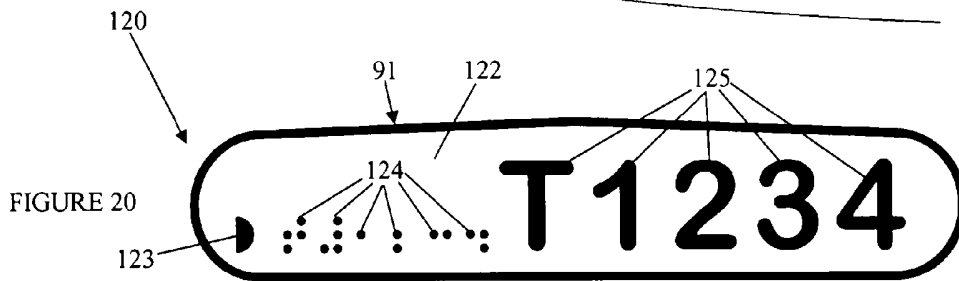
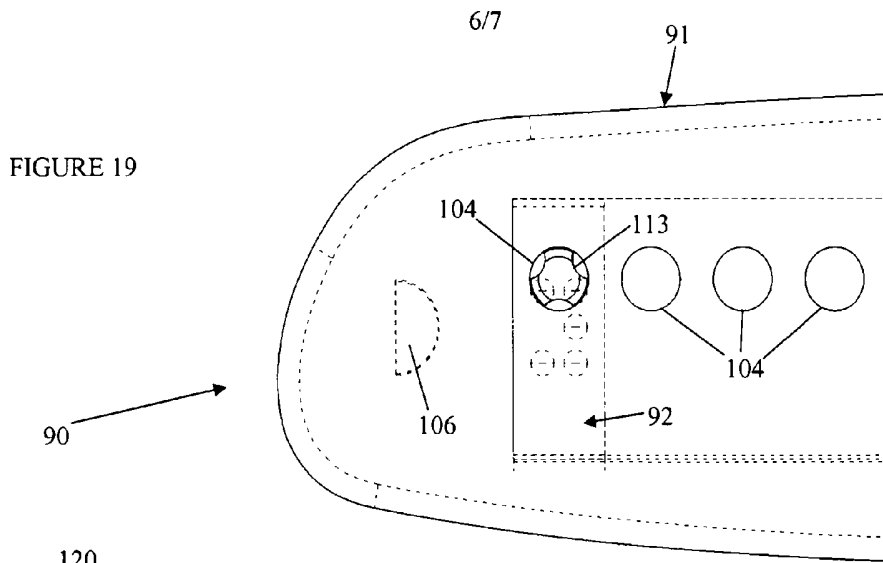


FIGURE 13







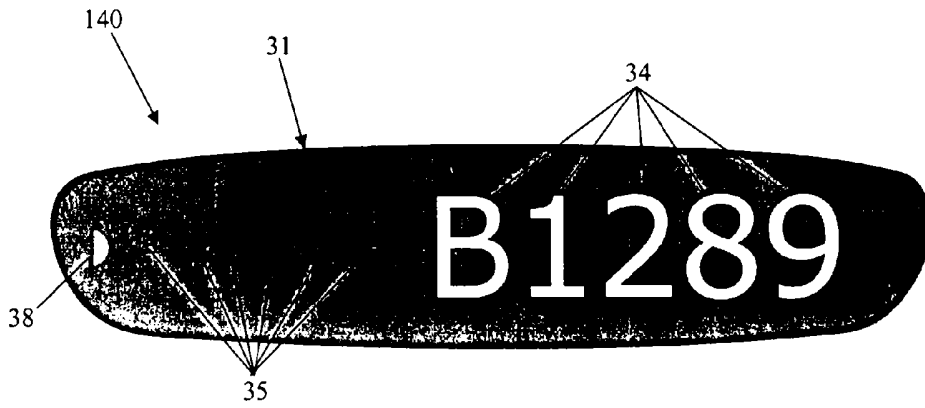


FIGURE 24

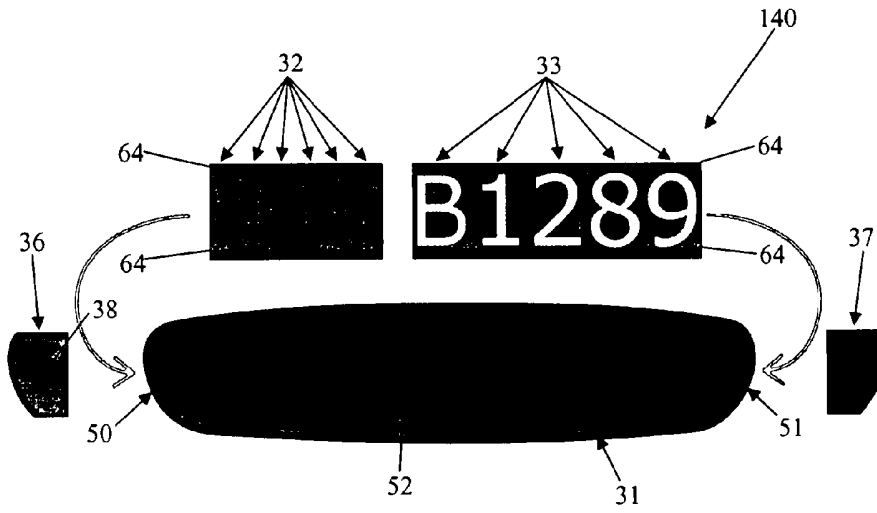


FIGURE 25