(54) Title: BLUETOOTH / WIRELESS AUTO LIFT NUMBER ACTIVATOR (HANDS FREE LIFT)

(57) Abstract: Most of people struggling to press the lift number when it's pack. Everybody try to reach their hands to the panel by squeezing their hands through. Some people carrying heavy goods struggling to lift their hands to press the buttons, or old people with bad eyesight struggling to figure out the numbers on the panel, or blind people will have difficulties to locate the panel, as well as the buttons. Now, the lift electronic panel/lift door will be fitted with an "Auto Selector/Activator System" which will interact wirelessly either with Mobile Phone Bluetooth Activation A free "Apps" will be developed for operating system like iPhone OS, Android, Windows Mobile, Blackberry, etc that will use Bluetooth to communicate with the lift's "Auto Selector/Activator System" to automatically select the preset lift number once the passenger enter the lift / while waiting for the lift to arrives. Each lift will have a unique number assigned, for example "2301", and will be displayed on the sticker for passenger to set their Apps to communicate with the lift (fig. 7). The will have a simple interface that allows users to first save lift data: a. Lift unique code/number, example "2301", b. First Selection Floor, example "1st Floor" (default), c. Second Selection Floor, example "13th Floor" (default), d. Security code, by default is "Public Lift" (user can key in password for private lift).
Bluetooth / Wireless Auto Lift Number Activator (Hands Free Lift)

**Problem**

Most of people struggling to press the lift number when it’s pack. Everybody try to reach their hands to the Lift/Elevator’s control station/panel by squeezing their hands through (fig. 1).

Some people carrying heavy goods struggling to lift their hands to press the buttons (fig. 2).

Or ladies carrying their children in their arms will find it very tough to reach the lift panel (fig. 3).

Some old people with bad eyesight struggling to figure out the numbers on the panel, which some of them are not very clear.

Blind people will have difficulties to locate the panel, as well as the buttons (fig. 4).

**Specifications & Descriptions of Ideas, Designs and Solutions**

The lift electronic panel/lift door will be fitted with an “Auto Selector/Activator System” which will interact wirelessly either with:

1. **Mobile Phone Bluetooth Activation**
   A free “Apps” (fig. 5) will be developed for operating system like iPhone OS, Android, Windows Mobile, Blackberry, etc that will use Bluetooth to communicate with the lift’s “Auto Selector/Activator System” to automatically select the preset lift number once the passenger enter the lift / while waiting for the lift to arrives.

   Each lift will have a unique number assigned, for example “2301”, and will be displayed on the sticker for passenger to set their Apps to communicate with the lift (fig. 7).

   The Apps (fig. 5) will have a simple interface that allows users to first save lift data:
   - Lift unique code/number, example “2301”
   - First Selection Floor, example “1st Floor” (default)
   - Second Selection Floor, example “13th Floor
   - Security code, by default is “Public Lift” (user can key in password for private lift)

   The Apps will able to store numbers of lift database number and the selection of the 2 floors each.
Example scenario based on above settings:
Mr. Teddy came back from works, once he enters his home lift No. 2301, the lift's wireless system will communicate with Teddy's smartphone via Bluetooth and automatically select Floor 13th, based on the preset value set in the Apps earlier. The same applies when Mr Teddy goes to works in the morning. As he entered the lift, it will automatically select 1st Floor automatically.

When Mr Teddy reach office tower, once he enters lift no 1980, it was jam pack, but once again the phone Apps will auto communicate with the lift's "Auto Selector/Activator System" and automatically select 23rd floor of his office floor without have to squeeze his hand to press the lift buttons.

Additional enhancement will be the lift speaker to announce that a certain floor has been selected everytime it got triggered by the smartphone, such as: "3rd Floor Selected!"

Additional Security Code Setting:
By default, the setting will be "Public Lift" means it able to control all public lift. However, for certain offices or condos, to be able to have this Auto Lift Number Activator to works, they have to key in additional "Password" in the Apps issued by building management, besides the Lift Number, First Selection and Second Selection. This will allows more secure control for certain lift with private access. Some lift will even totally without the Floor Panel buttons, entirely controlled by apps/wireless, and the password issues by the security counter during registration.

Location of Lift’s "Auto Selector/Activator System"
There might be 2 choices on the location of the Lift’s "Auto Selector/Activator System" that will communicate with the smartphones via Bluetooth.

First is inside the lift, when passengers walks in, it will communicate with their smartphones and triggers the panel.

The second choice is located outside the lift, means, while passengers waiting for the lift to arrive, the system already communicating with all smartphones outside the lift and record down their floor preference. Once the lift arrives, before even they walk in, all floors already pre-selected. This method will speed up the selection as the lift will know where the passengers are going to, before it arrive to pick them. However this method requires a centralize database to store the preferences and scanners for each floors outside the lift (or just 1st floor will do). This method will have better and more accurate detection as the lift’s system will have plenty of time to scan those people wait outside the lift. If the lift cabin already located where the person is, the lift will also automatically open its door.
Manual Call the Lift
For those who never save the lift database, or not a regular use of that particular lift, they can also “CALL” the lift and set their lift preferences outside the lift while waiting for it to arrive. So within the same Apps, it will have another features called “To Call a Lift” (fig. 6) where passengers can preset their destination floor while waiting the lift to arrive. When it arrives, the lift already selected their floor preferences even before they walk in. This method will requires a scanner located outside the lift to communicate with the smartphones, preferable 1st floor.

2. Wireless Card/Tag Activation
A second choice of “Auto Lift Number Activator” will be via a “Physical Tag/Card”. Unlike Phone Apps above, a “Physical Tag/Card” will be issued to passengers with pre-recorded value of the lift information like the Phone Apps:
   a. Lift unique code/number, example “2301”
   b. First Selection Floor, example “1st Floor” (default)
   c. Second Selection Floor, example “13th” Floor
   d. Security code, by default is “Public Lift” (user can key in password for private lift)

This method is given to those who doesn’t have smartphones or older people or people with disabilities. They will keep the tag/card in their pocket or wallet.

And the lift will be equipped with wireless scanner (inside or outside the lift) to continuously scan any presence of tag/cards that enters the lift and automatically select the floor according to the passenger’s tag/cards pre-recorded values.

This method however, will have limitation such as:
   a. Passenger need to acquire the card/tag from a source such as building authority
   b. Passenger need to ask the admin to record/amend the lift information they want to associate with.
   c. Lift will require a stronger wireless scanner to scan the card/tag presence as it will not broadcast itself like Phone’s Bluetooth.
CLAIMS

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

Bluetooth / Wireless Auto Lift Number Activator (Hands Free Lift)

1. Method of selecting the Lift/Elevator Floor Number wirelessly by Mobile Phone’s Bluetooth or Tag Card, without manually pressing the Lift/Elevator’s control station/Panel.

2. The combination defined in claim 1, wherein Lift/Elevator’s control station/Panel will be equipped with “Auto Selector/Activator System” electronic component that has Bluetooth unit that will communicate with Mobile Phone’s Bluetooth unit. This Auto Selector/Activator System’s Bluetooth will continuously scan for presence any Mobile Phone’s Bluetooth outside/inside the lift.

3. The combination defined in claim 2, wherein the “Auto Selector/Activator System” electronic component will trigger Lift/Elevator’s control station/Panel floor once it’s communicated with Mobile Phone’s Bluetooth.

4. The combination defined in claim 3, wherein the “Auto Selector/Activator System” electronic component will only trigger ONE floor for each mobile phone detected.

5. The combination defined in claim 2, wherein each lift/elevator will be assigned an Unique Number/Code and set in the “Auto Selector/Activator System” electronic component.

6. The combination defined in claim 5, wherein each lift will have Stickers put outside the lift with visible Unique Number/Code that represent the lift code for passenger to set in the Apps/Software.

7. The combination defined in claim 3, wherein Mobile Phone will install specific Apps/Software to store Lift’s Data in order to trigger certain lift, they are : Lift Number, First Selection Floor, Second Selection Floor, Optional Security Code.

8. The combination defined in claim 7, wherein the Apps/Software utilizing the phone’s Bluetooth to communicate with Lift/Elevator’s control station/Panel’s “Auto Selector/Activator System” electronic component that has Bluetooth unit as well. And
will trigger the floor selection provided all Lift Unique Number match between the Lift/Elevator and Mobile Phone's Apps.

9. The combination defined in claim 7, wherein the "Lift Number" is the unique number/code passenger want to set. "First Selection Floor" will be the first choice of which floor defined, by default is 1st Floor or Ground Floor. "Second Selection Floor" will be the second choice of which floor defined, which usually the only floor the passenger goes every time. "Optional Security Code" is optional password value to be set to trigger certain lift/elevator with the same password value, without the correct password value, the lift/elevator "Auto Selector/Activator System" will not be triggered.

10. The combination defined in claim 2, wherein the “Auto Selector/Activator System” Bluetooth system can be located inside each lift/elevator cabin. Once passenger walk in into the lift/elevator cabin, “Auto Selector/Activator System” Bluetooth system will communicate with Mobile Phone’s Bluetooth.

11. The combination defined in claim 2, wherein the “Auto Selector/Activator System” Bluetooth system can be also located outside the lift/elevator. Once passenger wait outside the lift, the “Auto Selector/Activator System” already communicates with passenger Mobile Phone's Bluetooth. Therefore, before the passenger walk in, “Auto Selector/Activator System” will have already the database of the destination of those people waiting outside the lift. So once the lift/elevator arrive, all floors has been selected even before the passengers walk in.

12. The combination defined in claim 11, wherein if the "Auto Selector/Activator System" Bluetooth system located outside the lift/elevator, once passenger approaches the lift door, the lift/elevator will automatically call the lift, without the passengers have to press the lift button to call the lift.

13. The combination defined in claim 11, wherein if the “Auto Selector/Activator System” Bluetooth system located outside the lift/elevator, once passenger approaches the lift door, if the lift cabin already located where the passenger is, the lift will also automatically open its door once it communicated with the passenger’s mobile Bluetooth.

14. The combination defined in claim 3, once the Floor triggered by Lift/Elevator “Auto Selector/Activator System”, there will be optional automated pre-recorded voice announcement to tell the passengers that a certain floor has been selected, such as “3rd Floor Selected!”
15. The combination defined in claim 8, passengers can also Call The Lift without having to pre-set all lift/elevator data as in claim 9. Within same apps/software in mobile phone, it will have another function to Call The Lift without for just one time. This function is for passengers that do not use the lift/elevator frequently, or just visiting the building, therefore, while waiting for the lift to arrive, passengers can already pre-set the destination floor while still waiting outside for the lift to arrive.

16. The combination defined in claim 1 to claim 15, besides communicating with Mobile Phone’s Bluetooth, Lift/Elevator’s control station/Panel can also equipped with “Auto Selector/Activator System” electronic component that has wireless unit that will communicate with a TAG. And the Auto Selector/Activator System’s will continuously scan for presence any Tag outside/inside the lift. This Tag card/object need not to be touched near the lift’s control station/Panel, it will be scanned wirelessly by the lift’s “Auto Selector/Activator System”.

17. The combination defined in claim 16, the Tag card will be pre-recorded with values as in claim 9.
**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/SG 2013/000240

A. CLASSIFICATION OF SUBJECT MATTER
   IPC: B66B 1/34 (2006.01); B66B 1/18 (2006.01)
   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)
   B66B; H04Q
   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)
   WPI, EPDOC, TXTEN, TXTDE, INSPEC, Internet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
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<td>&quot;Controlling Home and Office Appliances with Smartphones&quot; (2006); Human-Computer Interaction Institute; Paper 163; retrieved on 07.01.2014 in the internet under URL: <a href="http://repository.cmu.edu/cgi/viewcontent.cgi?article=1162&amp;context=hcii">http://repository.cmu.edu/cgi/viewcontent.cgi?article=1162&amp;context=hcii</a> 01 January 2006 (01.01.2006) Page 1, last paragraph; Page 2, second paragraph; Page 6, section &quot;Smartphone Interface Generation&quot; to Page 12, third paragraph; Pages 13 and 14, section &quot;Conclusions&quot;</td>
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<td>Y A</td>
<td>WO 2011102654 A2 (SEONG, KI SU) 25 August 2011 (25.08.2011) See especially abstract; Figs. 1, 2, 4, 5 and their associated descriptions; Claims 1 to 6</td>
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<td>Y A</td>
<td>KR 20050076197 A (SAMSUNG EVERLAND INC.) 26 July 2005 (26.07.2005) Abstract; Fig. 1; Claims 1 to 5</td>
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<td>&quot;RFID RAISES ELEVATOR EFFICIENCY&quot; October 2011; RFID JOURNAL; retrieved on 07.01.2014 in the internet under URL: <a href="http://www.rfidjournal.com/articles/view?8844">http://www.rfidjournal.com/articles/view?8844</a> See entire article</td>
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