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(54) 【Title of invention】 Pedestrian route guidance device

(57) 【summary】

【Task】 A pedestrian route guidance device capable of route guidance using a step-count sensor by displaying a perspective view of the internal structure of a building and also usable as a mobile phone device.

【Solution】 Pedestrian route guidance

device includes an information storage medium 4, a step-count sensor 1, a display unit 6, an operation unit 8 for inputting data / instructions, a voice input / output unit 2, a processing unit 7, a communication Section 9. In the medium 4, map information is stored, including roads, railroads, etc. Other information is linked to the building information. Display unit 6 includes a

hologram display device and displays the

building in a perspective view.

Communication unit 9 can be used for telephone communication, and processing unit 7 performs route guidance based on the information stored in.

the medium 4, and also searches for a telephone number

【Range of Claims】

【Claim 1】 A storage unit for storing map information, including information on buildings and internal configuration information of buildings, displaying method for detecting pedestrian step counts, displaying the number of steps of pedestrians, navigation mode, providing a method for supporting a start point of a walking section and a start of route guidance where the pedestrian moves on foot within a specific path between an initial position and a second position of the building; In the navigation mode, the map information is read out from the storage method and displayed on the display, the specific route is displayed on the displayed map information, and the route guidance calculates the distance from the starting point based on the number of steps from the start point of the walking section detected by the step-count detecting method, and calculates a predicted current value of the pedestrian from the calculated moving distance

A pedestrian navigation system comprising a processing method for displaying on the map information being the display of the location.

internal configuration of the

(2)

【Claim 2】

A mode designating method for designating between a navigation mode and a telephone mode, a storage method for storing map information, this map information including information on buildings and internal configuration information of said buildings, Display method for displaying information; navigation mode in which the pedestrian is walking on a specific route between the first and second positions on the map Instruction method for instructing the start point of the moving walking section and the start of route guidance, the walking section includes the inside of the building, and in the navigation mode, the map information is read out from the storage method, Displaying the specific route on the displayed map information, and when the start of route guidance is instructed by the instructing method, displaying the specific route detected by the step-count detecting method displaying the predicted current position of the pedestrian on the displayed map information on the basis of the calculated moving distance, and displaying the predicted current position of the pedestrian on the displayed map information with the calculated moving distance, as well as in the telephone mode, displaying the ten key or a plurality of telephone number-based communication method for making a call based on the telephone number entered by the ten key or on the telephone number selected from the

list so as to enable telephone communication with the outside, Additionally, a route guidance device for pedestrians.

【Claim 3】

The step count detection in a pedestrian route guidance device includes a 3 axis acceleration sensor, according to claim 1 or 2,

【Claim 4】

A position specifying method for specifying the first position and the second position on the displayed map information in a navigation mode when the first position and the second position are designated, Route calculation method for performing cost calculation for each of the paths between the first position and the second position based on the information relating to the map information, and a method for selecting the specific route from among the calculated paths and a route selecting method for selecting one of said plurality of route guidance methods and said other route guidance method.

【Claim 5】

The information processing apparatus according to claim 1, wherein telephone number information is linked to the information of the building, and in a telephone mode, the processing method, when a specific building is designated on the map displayed on the display method, 3. Pedestrian route guidance apparatus according to claim 2, wherein telephone number information linked to an object is determined and said communication method originates a call based on the determined tel

ephone number information.

【Claim 6】

The storage method stores sales information and / or entertainment information linked to the information of the building displayed on the display method, and the processing method stores the sales information or the work displayed on the display method. The information processing apparatus according to any one of claims 1 to 5, wherein, when a piece of information is selected, the second position is designated by referring to the information on the building based on the selected sales information or the exhibition information of a pedestrian.

【Claim 7】

Pedestrian route guidance device according to any one of claims 1 to 6, wherein the display method includes a hologram display device and displays the internal configuration information in a non-oblique view.

【Detailed description of the invention】

【0001】

【Technical field to which the invention belongs】

TECHNICAL FIELD The invention in question relates to a route guidance device, and more particularly to a portable pedestrian route guidance device.

【0002】

【Conventional technology】

Conventionally, navigator systems for automobiles are well known. In this system, the current position of the car is obtained from the GPS position information and displayed on the map. Thus, the driver of the

automobile can know their current position and can confirm the route to their destination based on the route information. However, the navigator system for automobiles is large in size and not suitable for carrying. Also, to use the GPS, large electric power is necessary. In an automobile, a battery for an automobile can be used, but in a portable device, it is practically impossible to have such a large battery. Therefore, in portable navigator systems, it is generally difficult to consistently use GPS.

【0003】 It is disclosed that the guidance device for a pedestrian that detects the present position by GPS or geomagnetic sensor on Patent disclosure Heisei8-202982. However, when a pedestrian carries the device, the device is not necessarily held in a fixed orientation. Upside down left, and right may be reversed in some cases. Therefore, it is difficult to detect the position with high accuracy. Also, pedestrians move in various places. For example, when you walk in the street with high-rise buildings or a building, GPS position detection is not possible. Therefore, route guidance by GPS cannot be performed in buildings.

【0004】 Furthermore, when route guidance is performed in a building, how to display the internal structure on the display part is a problem. For example, it is easy to confirm the current position by displaying it on a single plane, but it is insufficient from the viewpoint of route guidance. Also, by dividing the screen and displaying multiple floors at once, it is difficult to recognize each floor.

【0005】 Therefore, it is desirable to display from the starting position to the target position in the building. However, simply displaying the state of the plurality of floors on display section makes it difficult for the user to see it. Therefore, it is desired to three-dimensionally display the internal structure of the building.

【0006】 For example, as on a vehicle head-up display, there is an example in which a hologram display device is used as disclosed in Patent disclosure Heisei 5-104980 or 5-104979.

【0007】

【Problem to be solved by this invention】 Therefore, the invention in question can detect the current position even in a building in which the GPS cannot be used, and can detect the current position using the step count sensor without depending on the GPS, and even in the situation where the GPS can be used It is an object of the invention in question to provide a pedestrian route guidance device.

【0008】 Another object of the invention in question is to provide a pedestrian route guidance device as an information terminal which is suitable for carrying and which can be used as a route guiding device and also as a mobile phone at the same time.

【0009】 Still another object of the invention in the question of this device is to provide a navigation system which maintains a plurality of pieces of information such as event information linked to buildings in map information and makes a telephone call

based on the information or can designate a target position.

【0010】 Still another object of the invention in question is to provide a pedestrian route guiding device capable of displaying a perspective view inside a building and capable of displaying the current position on the internal configuration information of the building.

【0011】

【Method for solving the problem】

In order to achieve the aspect of the present invention, pedestrian route guidance device of the invention in question comprises a storage method for storing map information, the map information including building information and internal structure information of the building. A pedestrian detecting method for detecting the number of steps of the pedestrian; display method for displaying the information; and a display method for displaying the pedestrian in a navigation mode within the specific path between the first and second positions on the map, An instruction method for instructing the start point of the walking section and the start of route guidance where the walking section moves on foot and the walking section includes the inside of the building. Further, in the navigation mode, the map information is read out from the storage method and displayed on the display method, the specific route is displayed on the displayed map information, and when instructed to start route guidance by the instructing method calculating a distance from the starting point

based on the number of steps from the start point of the walking section detected by the step-count detecting method, displaying the predicted current position of the pedestrian in the preceding period from the calculated moving distance and processing method for displaying the map information.

【0012】 In order to achieve another aspect of the present invention, a pedestrian route guidance device of the invention in question comprises: mode designation method for designating one of a navigation mode and a telephone mode; a storage method for storing map information, a method for detecting the number of steps of a pedestrian; display method for displaying information; display method for displaying information in a navigation mode; Instructing method for instructing the start point of a walking section and the start of route guidance for allowing the pedestrian to walk within a specific route between the initial and second positions on the map; The map information is read out from the storage method and displayed on the display method in the navigation mode, the interior of the building is displayed, the specific route is displayed on the map information displayed in the previous term, calculating a distance from the starting point on the basis of the number of steps from the start point of the walking section detected by the step-count detecting method when the start of the route guidance is initiated and calculating the distance from the starting point to the pedestrian processing method for displaying

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