DESCRIPTION

Title of Invention: TRAVELING APPARATUS FOR ADVERTISEMENT AND PROMOTION

Technical Field

[0001]

The present invention relates to a traveling apparatus for advertisement and promotion.

Background Art

[0002]

Patent Literature (PTL) 1 discloses a conventional motorbike for advertisement and promotion. In this motorbike for advertisement and promotion, a pole of a specific length is erected at the rear part of the motorbike body, and an advertising flag or a sign is attached to the upper-end part of the pole. With the motorbike for advertisement and promotion of PTL 1, for example, performing advertisement and promotion is possible during delivery.

Citation List

Patent Literature

[0003]

PTL 1: Japanese Utility Model Registration No. 3184287

Summary of Invention

Technical Problem

[0004]

However, the motorbike for advertisement and promotion disclosed in PTL 1 has disadvantages in that the advertising flag or sign is only attached to the upper-end part of the pole and is thus located out of sight of pedestrians etc. Even if someone notices the advertising flag etc., he or she cannot recognize the content shown on the advertising flag etc., making it impossible to obtain appropriate advertising and promotional effects.

[0005]

In view of the above circumstances, an object of the present invention is to provide a traveling apparatus for advertisement and promotion that is capable of effectively providing advertisement and promotion to people around while traveling.

Solution to Problem

[0006]

A traveling apparatus for advertisement and promotion according to one embodiment of the present invention comprises a traveling body that includes a driving seat, and that is capable of traveling in a forward direction with multiple wheels, and

a pair of displays mounted on each of a pair of side wall parts standing at a portion of the traveling body behind the driving seat, with the display surfaces facing a direction orthogonal to the forward direction and opposite directions from each other.

[0007]

In the traveling apparatus for advertisement and promotion of the present invention according to this embodiment, it is preferable that the traveling body is an electric tricycle including three wheels, and that the electric tricycle includes motor-driven drive wheels.

[0008]

In the traveling apparatus for advertisement and promotion of the present invention according to this embodiment, it is preferable that the traveling apparatus further comprises an electric power supply device for supplying electric power to the displays, and that the electric power supply device includes a solar cell module.

[0009]

In the traveling apparatus for advertisement and promotion according to this embodiment, it is preferable that the traveling apparatus further comprises a container including the

pair of side wall parts, the container being mounted on a portion of the traveling body behind the driving seat, that the container includes an outer corner part formed of a top wall part and a rear wall part, the outer corner part being inclined downward in a backward direction with respect to the top wall part, and that the solar cell module is attached so as to extend from the top wall part to the outer corner part.

[0010]

In the traveling apparatus for advertisement and promotion of the present invention according to this embodiment, it is preferable that the pair of side wall parts each include an opening part that corresponds to the size of the display surface of each of the displays and a transparent plate for blocking the opening part, and that the displays are each mounted such that the display surface faces the rear surface of the transparent plate.

Advantageous Effects of Invention

[0011]

The traveling apparatus for advertisement and promotion of the present invention according to this embodiment is advantageous in that advertisement and promotion can be effectively provided to people around while traveling.

Brief Description of Drawings

[0012]

Fig. 1 is a side view of a traveling apparatus for advertisement and promotion according to one embodiment of the present invention.

Fig. 2 is a perspective view from the back of the traveling apparatus for advertisement and promotion.

Fig. 3 is a cross-sectional view of a plane orthogonal to the front-back direction, in terms of one of the side wall parts of the container of the traveling apparatus for advertisement and promotion.

Fig. 4 is a block diagram of the traveling apparatus for advertisement and promotion.

Description of Embodiments

[0013]

Embodiments

(1) Overall

As shown in Fig. 1, a traveling apparatus 1 for advertisement and promotion according to this embodiment comprises a traveling body 2 that is capable of traveling on a traveling surface R1 in a forward direction, a container 3, a pair of displays 4, a control device 5 (Fig. 4), and an electric power supply device 6. The display surfaces 41 of the pair of displays 4 face a direction orthogonal to the forward direction and opposite directions from each other.

[0014]

As described above, the traveling apparatus 1 for advertisement and promotion can move while an image (including a moving image) is displayed on the display surfaces 41, which are facing a direction orthogonal to the traveling direction (forward direction) and opposite directions from each other. For this reason, for example, when the displayed image is an image for advertisement and promotion, the advertising push is effectively made to people walking on a sidewalk, people riding in vehicles traveling on roadways, people in vehicles parked in parking lots, and the like.

[0015]

The traveling apparatus 1 for advertisement and promotion can be used not only for mere transportation but also, for example, for delivery services such as delivery of food, parcels, and letters. Therefore, while delivering a product, it is possible to advertise and promote a product and/or a brand that the owner of the traveling apparatus 1 for advertisement and promotion wants to push, or a product and/or a brand that an advertiser requested be pushed.

[0016]

The “traveling surface R1” as used herein refers to a surface on which the traveling body 2 can travel. Examples of the traveling surface R1 include road surfaces, land surfaces, floor surfaces, and railroad tracks. The traveling surface R1 may be a flat surface or an uneven surface. Further, the traveling surface R1 may be a horizontal plane or a plane having a gradient; in the present specification, the surface is defined as a horizontal plane for convenience of explanation.

[0017]

The term “display surface 41” of the display 4 refers to an area in which output images such as characters and figures are displayed. When the display 4 has a bezel, “display surface 41” refers to an area surrounded by the bezel. The display surface 41 may have a flat surface or a concave surface.

[0018]

In the present specification, the term “image” includes both still images and moving images (video).

[0019]

The traveling apparatus 1 for advertisement and promotion according to this embodiment is described below in more detail.

[0020]

(2) Traveling Body

The traveling body 2 is a vehicle that is capable of traveling on the traveling surface R1 at least in a forward direction with multiple wheels 21. The traveling body 2 includes a driving seat 26; a rider can be seated on this seat. The traveling body 2 can move in the forward direction and can also move in the backward direction. In this specification, the normal traveling direction is defined as “the forward direction,” and the opposite direction is defined as “the backward direction.”

[0021]

The traveling body 2 may have two, three, or four wheels, and preferably has three wheels from the standpoint of

having an ability to turn in a small radius and stability at low speeds. The drive source of the traveling body 2 may be human power. Alternatively, the drive source may be, for example, a motor (electric motor), engine, hydraulic motor, air motor, or hydrogen-fueled internal-combustion engine. The power source of the drive source is not particularly limited, and may be, for example, electricity, gasoline, hydrogen, natural gas, and coal.

[0022]

In this embodiment, the traveling body 2 is an electric tricycle in which the wheels 21 are driven by a motor powered by electricity (an electric power source) (i.e., motor-driven wheels). When an electric tricycle is used as the traveling body, no exhaust gas is discharged, which not only reduces the burden on the environment, but also prevents the image of products and brands for advertisement and promotion from being damaged, and gives more positive impression. Further, the motor as the drive source makes no unwanted noise, preventing the image of the products and brands for advertisement and promotion from being damaged. In addition, sound can be effectively provided to people around, together with the image for the advertisement and promotion.

[0023]

As shown in Fig. 1, the traveling body 2 has multiple wheels 21, a vehicle body 22, a drive mechanism 23, a roof 24, and a handle 25.

[0024]

The wheels 21 support the vehicle body 22 on the traveling surface R1. In this embodiment, three wheels are provided as the wheels 21. The front wheel is an idler wheel (non-drive wheel), and the two rear wheels are drive wheels. The drive wheels are connected to the drive mechanism 23. In this embodiment, the two rear wheels 21 of the three wheels are drive wheels. In another embodiment, the front wheel may be a drive wheel.

[0025]

The vehicle body 22 is a structure supported by the wheels 21. The vehicle body 22 includes a front vehicle body 221 provided with the driving seat 26, and a rear vehicle body 222 provided with the displays 4. The front vehicle body 221 is rotatably connected to the rear vehicle body 222 via a rotation axis X1 along the front-back direction. According to this configuration, for example, when a rider operates the handle 25 to turn in the left or right direction, the front vehicle body 221 will tilt in that direction with respect to the traveling surface R1, whereby the traveling body 2 can turn in the left or right direction.

[0026]

The drive mechanism 23 is dynamically connected to the drive wheels. The drive source of the drive mechanism 23 is a motor as described above. The drive mechanism 23 is mounted on the rear vehicle body 222. Although not particularly shown, the rotational force from the motor is transmitted to the pair of the drive wheels through, for example, a decelerator, a shaft, and a transmission.

[0027]

The roof 24 covers the driving seat 26. The roof 24 is bridged between columns 241 standing at the rear end part of the front vehicle body 221 and the front end part of the front vehicle body 221. The roof 24 is inclined downward in the forward direction with respect to the traveling surface R1. The roof 24 has an outwardly curved surface. The roof 24 is partially transparent at the front so as not to obstruct the view of the rider. The roof 24 may alternatively be entirely formed of a transparent plate 332.

[0028]

The handle 25 is a grip to steer the traveling body 2 in the traveling direction. The handle 25 is connected to a front fork 251 that supports the front wheel; by operating the handle 25, the front wheel can be rotated around the central axis of the column of the front fork 251.

[0029]

(3) Container

A container 3 is mounted on a portion of the traveling body 2 behind the driving seat 26 (the portion here is the rear vehicle body 222) and has a storage space inside. As shown in Fig. 1, the container 3 includes an outer corner part 35 formed of a top wall part 34 and a rear wall part 32, and the outer corner part is inclined downward in the backward direction with respect to the upper surface of the top wall part 34. Specifically, the outer corner part 35 has a curved surface in a side view. The container 3 includes a front wall part 31, a rear wall part 32, a pair of side wall parts 33, the top wall part 34, a bottom wall part (not shown), and the outer corner part 35 described above.

[0030]

The front wall part 31 is a portion forming a wall surface of the container 3 on the front side. The front wall part 31 is positioned approximately orthogonal to the front-back direction. The rear wall part 32 is a portion forming a wall surface of the container 3 on the rear side. The rear wall part 32 is positioned approximately orthogonal to the front-back direction and approximately parallel to the front wall part 31. As shown in Fig. 2, the rear wall part 32 has a storage opening 321 and a door 322 that can open and close the storage opening 321. The storage opening 321 penetrates the rear wall part 32; thus, through the storage opening 321, a product can be placed in the container 3 or removed from the container 3.

[0031]

The container 3 includes inside a control device 5 described later. For example, the control device 5 is installed near the storage opening 321 of the container 3, and is disposed in a position where the image displayed on the display 4 is easily operated.

[0032]

As shown in Fig. 1, the side wall parts 33 stand in the front-back direction (i.e., a direction orthogonal to the left-

right direction) in the rear vehicle body 222. The pair of side wall parts 33 are approximately parallel to each other. As shown in Fig. 3, the side wall parts 33 each include an opening part 331, which corresponds to the size of the display surface 41 of the display 4, and a transparent plate 332, which blocks the opening part 331.

[0033]

The opening part 331 penetrates the side wall part 33. The opening part 331 has an approximately rectangular shape (including a square). In the present invention, however, the opening part 331 is not limited to having a rectangular shape, and may have, for example, a circular shape, a pentagonal shape, or a triangular shape.

[0034]

The transparent plate 332 blocks the opening part 331, keeping the perimeter of the opening part 331 watertight. This configuration prevents rainwater from entering between the opening part 331 and the transparent plate 332. The perimeter of the opening part 331 and the transparent plate 332 are kept watertight by, for example, fitting in or by using a gasket (dry/wet), caulk, or labyrinth structure.

[0035]

As shown in Fig. 3, the display surface 41 of the display 4 faces the rear surface (the surface facing the inside of the container 3) of the transparent plate 332. The transparent plate 332 and the display surface 41 of the display 4 are preferably close to each other, and more preferably in contact with each other. The display 4 is attached to the rear surface (the surface facing the inside of the container 3) of the side wall part 33, for example, with fixtures 333 with a cross-sectional crank shape. The attachment of the display 4 to the side wall part 33 is not limited to the fixtures 333 with a cross-sectional crank shape, and may also be performed by means of, for example, gluing, hanging, screwing, or pinning.

[0036]

The transparent plate 332 is not particularly limited, and may be, for example, an acrylic plate, a polycarbonate plate, a glass plate, a vinyl chloride plate, and a PET (polyethylene terephthalate) plate. In this embodiment, an acrylic plate is used. The term “transparent” as used herein means that the transparent plate 332 has a transmittance to an extent that the screen of the display 4 is visible through the transparent plate 332. In this embodiment, for example, a transmittance of 5% or more is regarded as “transparent,” and translucent materials also fall under the category of “transparent.” However, the transparent plate 332 preferably has a higher transmittance to achieve higher visibility.

[0037]

The top wall part 34 constitutes the upper surface of the container 3. The top wall part 34 is along the horizontal plane and faces upward. A solar cell module 62 described later is attached to the top wall part 34 and the outer corner part 35. Since the outer corner part 35 formed of the top wall part 34 and the rear wall part 32 of the container 3 is inclined downward with respect to the top wall part 34, the presence of the solar cell module 62 is visually recognizable by pedestrians etc. This gives the pedestrians etc. a positive impression of the traveling apparatus 1 for advertisement and promotion, thereby improving the image of the products and brands for advertisement and promotion.

[0038]

(4) Display

The display 4 is a device that displays on the display surface 41 figures, characters, etc. that are output from the control device 5. As shown in Fig. 1, the direction in which the display surface 41 of the display 4 faces is a direction orthogonal to the front-back direction and a direction facing the outside from the inside of the container 3. Therefore, the pair of displays 4 face opposite directions from each other. In the present specification, the display 4 on the left side with

respect to the traveling direction may be referred to as a “first display 4A”, and the display 4 on the right side may be referred to as a “second display 4B.”

[0039]

As used here, “the direction in which the display surface 41 faces” refers to a direction along a normal line passing through the center (center of the figure) of the display surface 41 from among the normal lines of the display surface 41. However, in the present invention, the expression “the pair of displays 4 face opposite directions from each other” does not strictly mean “opposite directions.” The pair of displays 4 may be mounted in any direction as long as the displays 4 are visually recognizable by people on both sides with respect to the traveling direction of the traveling body 2. The angle between the directions in which the display surfaces 41 of the pair of displays 4 face may not be 180°. For example, an embodiment in which the angle is 180°±20° also falls under the category in which “the pair of displays 4 face opposite directions from each other.”

[0040]

The display 4 is not particularly limited. Examples include liquid crystal displays, organic EL displays, plasma displays, and cathode-ray tube displays. The size of the display surface 41 of the display 4 is not particularly limited. For example, the size is preferably 40 inches or more, more preferably 50 inches or more, and still more preferably 55 inches.

[0041]

The height of the display surface 41 of the display 4 is such that the length between the traveling surface R1 and the lower end of the display surface 41 is preferably 300 mm or more, more preferably 400 mm or more, and still more preferably 450 mm or more, and that the length between the traveling surface R1 and the upper end of the display surface 41 is preferably 2000 mm or less, more preferably 1900 mm, and still more preferably 1850 mm. In this configuration, the display surfaces 41 of the displays 4

can be disposed in appropriate positions for the eye level of pedestrians etc. around to perform effective advertisement and promotion.

[0042]

(5) Control Device

The control device 5 controls the display of the display 4. The control device 5 comprises a computer mainly composed of a microcontroller with at least one processor and at least one memory. The functions of the control device 5 are activated by executing a program stored in the memory of the microcontroller by the processor of the microcontroller. The program may be stored in the memory in advance or may be provided on a non-temporary storage medium such as a memory card.

[0043]

As shown in Fig. 4, the control device 5 includes an image input unit 51, an image control unit 52, and a sound control unit 53.

[0044]

The image input unit 51 is an input interface for inputting into the control device 5 image data to be displayed on the display 4. For example, the image input unit 51 may be for inputting image data stored on a storage medium or image data received wiredly or wirelessly via the Internet. The image input unit 51 is not particularly limited. Examples include HDMI (registered trademark), USB terminals, LAN terminals, SD-SDI, HD (1.5G)-SDI, 3G-SDI, 6G-SDI, 12G-SDI, Bluetooth (registered trademark) receivers, Wi-Fi (registered trademark) receivers, and SD card readers.

[0045]

The image control unit 52 causes the displays 4 to display an image by using the image data input to the image input unit 51. In this embodiment, the image control unit 52 causes the first display 4A and the second display 4B to display the same image. Alternatively, the image control unit 52 can cause these displays to display different images.

[0046]

The image control unit 52 can split the screen of the displays 4 to display multiple images on a single screen or can cause the displays 4 to display different images in a single image, i.e., a picture-in-picture image.

[0047]

The image control unit 52 can provide a lightness sensor to the traveling apparatus 1 for advertisement and promotion to control the luminance, brightness, and/or saturation of the image to be adjusted based on the electric signal obtained from the lightness sensor. For example, the image control unit 52 controls the brightness to be adjusted to a higher level when traveling in the daytime and to a lower level when traveling at night.

[0048]

The sound control unit 53 controls a speaker 7 so as to output sound in accordance with the display of the display 4. The sound control unit 53 extracts the sound data stored in the image data that has been input to the image input unit 51, and outputs the sound in accordance with the image in cooperation with the image control unit 52.

[0049]

The sound control unit 53 may output no sound when no sound data is stored for the image data that has been input to the image input unit 51. Alternatively, the sound control unit may output sound based on the sound data obtained separately via memory or the Internet. In the present specification, the term “sound” includes various types of sound such as music, human voices, mechanical sound, impulsive sound, animal barking, and insect sound.

[0050]

As shown in Fig. 1, the speaker 7 is installed below the display 4 (between the display 4 and the vehicle body 22) in each side wall part 33. The speaker 7 is preferably waterproof.

[0051]

(6) Electric Power Supply Device

The electric power supply device 6 supplies electric power to the control device 5 and the displays 4. The electric power supply device 6 can also supply electric power to the motor that drives the drive wheels. As shown in Fig. 4, the electric power supply device 6 includes a battery 61 and the solar cell module 62.

[0052]

The battery 61 is a device that stores externally obtained electrical energy and extracts the energy as electromotive force as needed. The battery 61 may be installed in the vehicle body 22 or may be installed inside the container 3. The battery 61 may be shared with the battery of the traveling body 2 or may be used individually. That is, the battery 61 may be configured to supply electric power to both the motor and the displays 4. The battery 61 may be charged after being removed from the traveling apparatus 1 for advertisement and promotion, or may be charged by electric power supply using a charging plug provided with the traveling body 2. The charging plug of the traveling body 2 is housed inside reference numeral 8 in Fig. 1 and can be pulled out for use.

[0053]

The solar cell module 62 supplies electric power to the battery 61, the control device 5, the displays 4, and/or the traveling body 2. In this embodiment, the phrase “supply electric power to the traveling body 2” means that electric power is supplied to the battery of the traveling body 2. Therefore, the solar cell module 62 can supply electric power to the motor. The solar cell module 62 is in the form of panels and is installed along the upper surface (top surface) of the top wall part 34 of the container 3, as shown in Fig. 2. According to this configuration, charging the battery 61, supplying electric power to the displays 4, and saving electric power of the battery 61 are possible while the traveling apparatus 1 for advertisement and promotion is traveling. Additionally, preventing the voltage

of the battery 61 from dropping and preventing the displays 4 from being unable to display images are possible while the traveling apparatus 1 for advertisement and promotion is traveling.

[0054]

As shown in Fig. 2, the solar cell module 62 is installed from the top wall part 34 to the outer corner part 35. Therefore, from the back of the traveling apparatus 1 for advertisement and promotion, the presence of the solar cell module 62 is visually recognizable by pedestrians. In this embodiment, the solar cell module 62 extends through the entire outer corner part 35 (i.e., to the upper end of the rear wall part 32). The solar cell module 62 can alternatively extend to the middle of the outer corner part 35.

[0055]

Modified Examples

The embodiment described above is a mere example of various embodiments of the present invention. The embodiment can be modified in various ways according to the design etc. as long as the problem solved by the present invention can be solved. Modified examples of the embodiment are given below. The modified examples described below can be used in combination as appropriate.

[0056]

The traveling body 2 in the above embodiment is an electric tricycle including a single front wheel and two rear wheels. In the present invention, the traveling body 2 may also be a reverse tricycle including two front wheels and a single rear wheel. Alternatively, the traveling body 2 may be a motorcycle (two wheels), all-terrain vehicle, automobile, or the like.

[0057]

The container 3 according to the above embodiment includes the opening parts 331 and the transparent plates 332 for blocking the opening parts 331, and the screens of the displays 4

are shown to people around through the transparent plates 332. In the present invention, the display surfaces 41 of the displays 4 may alternatively be exposed from the opening parts 331 so that the screens of the displays 4 are directly shown to people around. Further, the displays 4 may alternatively be attached to the surface of each of the side wall parts 33 of the container 3. The attachment of the displays 4 to the surface of each of the side wall parts 33 may be achieved, for example, by hanging with hooks, gluing, or screwing, or via arms etc.

[0058]

The side wall parts 33 according to the above embodiment are in the form of a panel. Alternatively, the side wall parts 33 may be in the form of, for example, a frame, a pair of poles, or a mesh (e.g., perforated metal, expanded metal).

[0059]

The traveling apparatus 1 for advertisement and promotion according to the above embodiment comprises the control device 5. Alternatively, for example, a terminal may be provided to allow for connection to devices such as portable media players, laptop PCs, smartphones, etc., and a device connected to the terminal as needed may be used as the control device 5.

[0060]

In the traveling apparatus 1 for advertisement and promotion according to the above embodiment, the outer corner part formed of the top wall part 34 and the rear wall part 32 has a curved shape in a side view. Alternatively, the outer corner part may have a flat surface or a concave curved surface in a side view as long as the outer corner part is inclined with respect to the top wall part 34.

[0061]

In the present specification, expressions with the term “approximately” are sometimes used, such as “approximately parallel” and “approximately orthogonal.” For example, the expression “approximately orthogonal” means substantially “orthogonal”; thus, the expression not only refers to a strictly

“orthogonal” state but also refers to an orthogonal state with an error of a few degrees. In other words, the term “orthogonal” has the same meaning as approximately orthogonal. The same applies to other expressions with “approximately.”

[0062]

Further, in the present specification, expressions such as an “end part” and an “end” are used to distinguish the meanings by using or not using “part.” For example, the expression “end” means the end of an object while the expression “end part” refers to a region with a certain range that includes the “end.” Any point that is within a certain range, including the end, is considered to refer to an “end part.” The same applies to other expressions with “part.”

Description of Reference Numerals

[0063]

1: Traveling apparatus for advertisement and promotion
2: Traveling body
21: Wheel
26: Driving seat
3: Container
33: Side wall part
331: Opening part
332: Transparent plate
4: Display
41: Display surface
6: Electric power supply device
62: Solar cell module

CLAIMS

[Claim 1]

A traveling apparatus for advertisement and promotion comprising

a traveling body that includes a driving seat, and that is capable of traveling in a forward direction with multiple wheels, and

a pair of displays mounted on each of a pair of side wall parts standing at a portion of the traveling body behind the driving seat, with the display surfaces facing a direction orthogonal to the forward direction and opposite directions from each other.

[Claim 2]

The traveling apparatus for advertisement and promotion according to claim 1, wherein the traveling body is an electric tricycle including three wheels, and the electric tricycle includes motor-driven drive wheels.

[Claim 3]

The traveling apparatus for advertisement and promotion according to claim 1 or 2, further comprising an electric power supply device for supplying electric power to the displays, wherein the electric power supply device includes a solar cell module.

[Claim 4]

The traveling apparatus for advertisement and promotion according to claim 3, further comprising a container including the pair of side wall parts, the container being mounted on a portion of the traveling body behind the driving seat,

wherein the container includes an outer corner part formed of a top wall part and a rear wall part, the outer corner part being inclined downward in a backward direction with respect to the top wall part, and

wherein the solar cell module is attached so as to extend from

the top wall part to the outer corner part.

[Claim 5]

The traveling apparatus for advertisement and promotion according to claim 1,

wherein the pair of side wall parts each include

an opening part that corresponds to the size of the display surface of each of the displays and

a transparent plate for blocking the opening part, and

wherein the displays are each mounted such that the display surface faces the rear surface of the transparent plate.

[Claim 6]

The traveling apparatus for advertisement and promotion according to claim 2, further comprising an electric power supply device for supplying electric power to the displays and the motor for driving the drive wheels,

wherein the electric power supply device includes a solar cell module.