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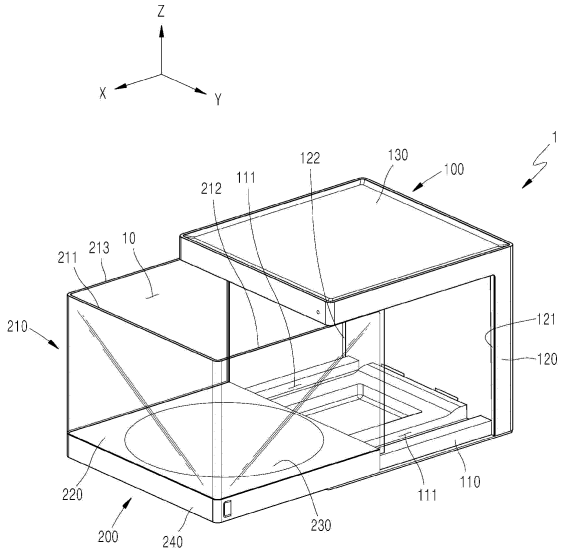
(54) SHOE CARE DEVICE

(57) A shoe care device according to an embodiment of the present invention comprises a body, a moving body, an air blower, a bracket, and a sliding rail. An accommodation space inside the shoe care device is closed when the moving body is positioned relatively in the back, and the accommodation space is open when the moving body is positioned relatively in the front. According to an embodiment of the present invention, the air in the accommodation space can be controlled, a shoe can be completely exposed from various directions through a transparent window to allow the shoe to be displayed effectively, and the moving body can smoothly move by a slider of the bracket and the sliding rail.

【Fig. 5】



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Description

[Technical Field]

[0001] The present invention relates to a shoe care device, and more particularly, to a shoe care device that manages and displays shoes stored therein.

[Background Art]

[0002] Only when shoes should be properly kept, the shoes can be worn for a long time without breaking the shape of the shoes. When the shoes are stacked in layers, the shape can be deformed. In general, a shoes cabinet is used for organization and keeping of the shoes.

[0003] In recent years, people who collect shoes of popular brands as part of hobby or financial tech have appeared, and a show case has been disclosed which is configured to keep and display the shoes.

[0004] US Patent Unexamined Publication No. 2018-0127150 (hereinafter, referred to as 'Prior Document 1') discloses "modular storage container", and the modular storage container includes a housing, a door panel, a fan, and a light source.

[0005] According to Prior Document 1 above, the housing has a rectangular parallelepiped box shape having an opening on a front surface thereof. The housing has an accommodation space therein. The door panel opens/closes the opening of the housing, and is configured to be transparent or translucent.

[0006] In Prior Document 1 above, the fan is installed on a rear panel of the housing. When the fan rotates, air in the accommodation space is ventilated to outside air. An air duct is formed in the housing for an air flow between the outside air and the accommodation space. The light source is installed in an upper panel and illuminates the accommodation space.

[0007] According to Prior Document 1 above, since internal air of the container is configured to be ventilated to the outside air, a possibility that an internal environment (temperature and humidity) of the container will be influenced by an external environment (temperature and humidity) of the container increases. That is, it may be difficult to control the internal temperature and humidity of the container.

[0008] For example, according to Prior Document 1 above, since the internal air of the container is just ventilated to the outside air, the humidity of the accommodation space can be continuously maintained when the humidity of the outside air is high like the rainy season. The air may change a color and a shape of the shoe stored in the container, and act to cause the shoe to be contaminated by mold and bacteria which are easy to breed at high temperature and humidity.

[0009] As such, in that Prior Document 1 above does not consider a technology of maintaining the internal temperature and humidity of the container in an optimal state, there is a risk of deformation or contamination of the shoe in the process of using the container by a user.

[0010] Further, according to Prior Document 1 above, the inside of the container can viewed only through a door panel, and the inside of the container cannot be viewed at a left side or a right side of the container, so there is a limit in increasing a display effect of the shoe.

[0011] In relation to a technology of displaying the shoes for a commercial purpose, Korean Patent Unexamined Publication No. 2013-0034367(hereinafter, referred to as 'Prior Document 2') discloses a show case having transmissive display having transparent display", and the resulting case is configured to include a show case body, a transparent display means, a turntable , a touch panel, and an LED.

[0012] The show case body has a space capable of storing products such as the shores therein. The transparent display means is installed on a front surface of the show case body. The products are seated on the turntable, and rotate inside the show-case body by the rotation of the turntable. The LED illuminates the products inside the show case body.

[0013] However, in that Prior Document 2 above does not consider a technology of controlling the internal temperature and humidity of the show case, there is a risk of deformation or contamination of the shoe in a state in which the show is stored inside the show case.

[0014] Further, according to Prior Document 2 above, the inside of the show case can be viewed only through the transparent display means, and the inside of the show case cannot be viewed at the left side or the right side of the show case, so there is a limit in increasing the display effect of the shoe.

[0015] Korean Patent Unexamined Publication No. 10-2000-0009653 (hereinafter, referred to as 'Prior Document 3') discloses "The shoes cabinet for the sanitization", and the resulting shoes cabinet is configured to include a body, an infrared radiation unit, a circulation fan, an air circulation passage, a sanitization filter unit, etc.

[0016] Prior Document 3 above discloses that the shoes are dehumidified, sanitized, and deodorized by far infrared rays and filters while storing the shoes.

[0017] However, according to Prior Art 3 above, the shoes cannot be displayed.

[0018] As described above, conventional devices that accommodate the shoes therein have a limit in the care of the shoes and the display of the shoes.

[0019] As a result, in the development of a shoe care device, considering whether the display effect of the shoes can be maximized while constantly maintaining an environment of an internal space (hereinafter, referred to as 'accommodation space') of the shoe care device, whether the accommodation space can be easily opened and closed, whether the shoes can be effectively stored and withdrawn in a state in which the accommodation space is opened, whether structural stability of the shoe care device can be ensured in a state in which the accommodation space is maximally opened, etc., is required.

[0020] Moreover, it should be considered whether structural rigidity of a lowest shoe care device can be maintained for a long period even though the shoe care devices are stacked in multiple layers, whether electrical stability can be effectively guaranteed even though the shoe care device is used for a long period, whether an interior effect by the shoe care device can be maximized in addition to the display effect of the shoe, whether internal components are appropriately arranged in a limited space, whether use convenience is excellent, etc., should also be considered, and the development of the shoe care device considering all of the points is required

[Disclosure]

[Technical Problem]

[0021] The present disclosure is to provide a shoe care device in which shoe care can be performed by controlling the air in an accommodation space where shoes are accommodated, excellent display of the shoes can be achieved by allowing the shoes to be fully exposed in as many directions as possible, and a moving body can be smoothly moved to open and close the accommodation space.

[0022] In addition, the present disclosure is to provide a shoe care device in which, when the moving body moves relative to a main body, friction that may occur between components that move relative to each other can be minimized or reduced, and stable movement of the moving body can be achieved by a sliding rail.

[0023] In addition, the present disclosure is to provide a shoe care device in which the sliding rail can be prevented from being seen from the outside, and foreign substances such as dust can be prevented from penetrating into the sliding rail.

[0024] Furthermore, the present disclosure is to provide a shoe care device in which stable structure of the shoe care device can be maintained even when a transparent window, which includes integrated front, left, and right surfaces, is moved as far forward as possible relative to the main body when shoes are put into and taken out of the shoe care device

[Technical Solution]

[0025] A shoe care device described herein includes a main body, a moving body, a blowing part, a bracket, and a sliding rail.

[0026] The main body includes a lower body, a middle body extending upward from a rear side of the lower body, and an upper body extending forward from an upper side of the middle body.

[0027] The moving body includes a base and a transparent window.

[0028] The base is located on the upper side of the lower body.

[0029] The transparent window is fixedly coupled to the upper side of the base.

[0030] The moving body defines an accommodation space configured to accommodate the shoes, together with the main body.

[0031] As the moving body moves back and forth relative to the main body, the accommodation space is opened and closed.

[0032] The blowing part is coupled to the main body and configured to circulate air in the accommodation space.

[0033] The bracket is coupled to the lower body. The bracket includes a slider. The shoe care device may be provided with one or more brackets.

[0034] The sliding rail at least partially has a constant cross section along the front and rear direction and is coupled to the slider to be movable back and forth. The sliding rail is coupled to the bottom surface of the base. The shoe care device may be provided with one or more sliding rails.

[0035] A plurality of balls may be interposed between the slider and the sliding rail to reduce friction.

[0036] The slider and the sliding rail may be configured to be engaged with each other to prevent relative movement in a direction other than the front and rear direction.

[0037] Two brackets and two sliding rails may be provided and symmetrically spaced apart on both left and right sides with respect to the center of the shoe care device.

[0038] The brackets may be located adjacent to the front end of the lower body.

[0039] The brackets and the sliding rails may be configured to be completely shielded by the base when viewed from above.

[0040] The length of the sliding rail in the front and rear direction may be 0.9 times or more and 1 times or less the length of the lower body in the front and rear direction.

[0041] A downwardly concave sliding groove may be formed on the upper side of the lower body to accommodate the brackets and the sliding rails.

[0042] The sliding groove may be divided into a first sliding groove and a second sliding groove.

[0043] The first sliding groove extends rearward from the front end of the lower body.

[0044] The second sliding groove extends rearward from the rear end of the first sliding groove.

[0045] The brackets may be accommodated in the first sliding groove and fixed to the lower body.

[0046] The sliding rails may be accommodated in the first sliding groove and the second sliding groove and move to protrude in front of the first sliding groove.

[0047] The sliding rail may include a first sliding rail and a second sliding rail.

[0048] The first sliding rail may be coupled to the bracket to be movable back and forth.

[0049] The second sliding rail may be coupled to the first sliding rail to be movable back and forth.

[0050] The transparent window may include a first

window, a second window, and a third window.

[0051] The first window may define the front surface of the shoe care device, the second window may define the left surface of the shoe care device, and the third window may define the right surface of the shoe care device.

[0052] The moving body may include a lower guard.

[0053] The lower guard may define an edge of the base and may be located outside the lower body on the front, left, and right sides.

[0054] The moving body may include a turntable.

[0055] The turntable may be coupled to the upper side of the base to be rotatable about a vertical rotation axis.

[0056] The transparent window may include a first fin portion and a second fin portion.

[0057] The first fin portion may integrally extend upward from the rear side of the second window.

[0058] The second fin portion may integrally extend upward from the rear side of the third window.

[0059] The upper body may include a first insertion groove, a first stopper, a second insertion groove, and a second stopper.

[0060] The first insertion groove is provided along the front and rear direction on the bottom surface of the upper body so that the first fin portion is inserted into and moves along the first insertion groove.

[0061] The first stopper is provided in front of the first insertion groove to prevent forward movement of the first fin portion.

[0062] The second insertion groove is provided along the front and rear direction on the bottom surface of the upper body so that the second fin portion is inserted into and moves along the second insertion groove.

[0063] The second stopper is provided in front of the second insertion groove to prevent forward movement of the second fin portion.

[0064] The transparent window may include a third fin portion and a fourth fin portion.

[0065] The third fin portion integrally extends rearward from the rear end of the second window.

[0066] The fourth fin portion integrally extends rearward from the rear end of the third window.

[0067] The middle body may include a third insertion groove and a fourth insertion groove.

[0068] The third insertion groove is provided along an up and down direction on the front surface of the middle body such that the third fin portion is inserted into the third insertion groove.

[0069] The fourth insertion groove is provided along the up and down direction on the front surface of the middle body to allow the fourth fin portion to be inserted into the fourth insertion groove.

[0070] The main body may include a light, a suction port, a suction port, an air path, and a heating part.

[0071] The light may be provided on the bottom surface of the upper body to illuminate the accommodation space.

[0072] The suction port may be provided in the bottom surface of the upper body.

[0073] The discharge port may be provided in the bottom surface of the upper body.

[0074] The air path may be provided inside the upper body and configured to interconnect the suction port and the discharge port so as not to interfere with the light.

[0075] The blowing part is disposed in the air path.

[0076] The heating part may be disposed in the air path to heat the air path.

[Advantageous Effect]

[0077] The shoe care device according to an embodiment of the present disclosure includes a main body, a moving body, a blowing part, a bracket, and a sliding rail. When the moving body is placed relatively at the rear side, the accommodation space inside the shoe care device is closed, and when the moving body is placed relatively at the front side, the accommodation space is opened. According to the embodiment of the present disclosure, the air in the accommodation space can be controlled, the shoes can be completely exposed in various directions through the transparent window so that the shoes can be displayed effectively, and the moving body can be moved smoothly by the slider of the bracket and the sliding rail.

[0078] In the shoe care device according to an embodiment of the present disclosure, a plurality of balls may be interposed between the slider and the sliding rail to reduce friction, and the slider and the sliding rail are configured to be engaged with each other to prevent relative movement in a direction other than the front and rear direction. According to the embodiment of the present disclosure, the friction generated between the slider and the sliding rail can be reduced to easily open or close the moving body from the main body, and the sliding rail moves in the front and rear direction to ensure stable movement of the moving body.

[0079] In the shoe care device according to an embodiment of the present disclosure, the bracket is coupled adjacent to the front end of the lower body, and the sliding rail is coupled to the bottom of the base so that the sliding rail is completely shielded by the base when viewed from above. According to the embodiment of the present disclosure, it is possible to prevent the sliding rail from being seen from the outside while securing a sufficient moving distance for the moving body when the moving body moves relative to the main body, and to prevent foreign substances such as dust from penetrating into the sliding rail.

[0080] The shoe care device according to an embodiment of the present disclosure may include a first fin portion, a second fin portion, a first insertion groove, a first stopper, a second insertion groove, and a second stopper. According to the embodiment of the present disclosure, the stable structure of the shoe care device can be maintained even when the moving body is moved as far forward as possible relative to the main body, and the moving body can be opened and closed smoothly.

[Brief Description of Drawings]

[0081]

FIG. 1A is a perspective view illustrating a shoe care device according to an embodiment of the present disclosure.

FIG. 1B is a perspective view illustrating the state in which shoes are accommodated in the accommodation space of the shoe care device of FIG. 1A.

FIG. 2A is a front view illustrating the shoe care device of FIG. 1B in use.

FIG. 2B is a side view illustrating the shoe care device of FIG. 1B in use.

FIG. 3A is a cross-sectional view illustrating a main body according to an embodiment of the present disclosure when an upper body is viewed in a direction indicated by line A-A' in FIG. 2A.

FIG. 3B is a cross-sectional view illustrating the main body according to an embodiment of the present disclosure when the upper body is viewed from below.

FIG. 4 is a perspective view illustrating a moving body according to an embodiment of the present disclosure.

FIG. 5 is a perspective view illustrating the accommodation space in an open state in the shoe care device according to an embodiment of the present disclosure.

FIG. 6A is a cross-sectional view illustrating a portion of the shoe care device according to an embodiment of the present disclosure.

FIG. 6B is a cross-sectional view illustrating a portion where sliding rails and brackets are coupled in the shoe care device according to an embodiment of the present disclosure.

FIG. 7 is a cross-sectional view illustrating a portion of the shoe care device according to an embodiment of the present disclosure.

FIG. 8A is a perspective view illustrating the state in which the brackets and the sliding rails are coupled to the lower body of the shoe care device according to an embodiment of the present disclosure, and FIG. 8b is a perspective view illustrating the state in which the sliding rails in FIG. 8A are moved.

FIG. 9 is a perspective view illustrating the bottom side of the moving body of the shoe care device according to an embodiment of the present disclosure.

FIG. 10A is a view schematically illustrating the lower body of the shoe care device according to an embodiment of the present disclosure. FIG. 10B is a view schematically illustrating the state in which the moving body is moved forward relative to the main body in the shoe care device according to an embodiment of the present disclosure.

FIG. 11 is a perspective view schematically illustrating the state in which a sliding rail and a slider are coupled in the shoe care device according to an embodiment of the present disclosure.

FIG. 12 is a front view schematically illustrating the state in which a sliding rail and a bracket are coupled in the shoe care device according to an embodiment of the present disclosure.

[Modes for Carrying out the Invention]

[0082] Hereinafter, embodiments disclosed in this specification will be described in detail with reference to the accompanying drawings and the same or similar components are denoted by the same or similar reference numerals, and duplicated description thereof will be omitted. Suffixes "module" and "unit" for components used in the following description are given or mixed in consideration of easy preparation of the present invention only and do not have their own distinguished meanings or roles. Further, in describing the embodiment disclosed in this specification, a detailed description of related known technologies will be omitted if it is determined that the detailed description makes the gist of the embodiment disclosed in this specification unclear. Further, it is to be understood that the accompanying figures are just used for easily understanding the embodiments disclosed in this specification and a technical spirit disclosed in this specification is not limited by the accompanying figures and all changes, equivalents, or substitutes included in the spirit and the technical scope of the present invention are included.

[0083] Terms including an ordinary number, such as first and second, are used for describing various elements, but the elements are not limited by the terms. The terms are used only to discriminate one element from another element.

[0084] It should be understood that, when it is described that a component is "connected to" or "accesses" another component, the component may be directly connected to or access the other component or a third component may be present therebetween. In contrast, when it is described that a component is "directly connected to" or "directly accesses" another component, it is understood that no element is present between the element and another element.

[0085] A singular form includes a plural form if there is no clearly opposite meaning in the context.

[0086] In the present application, it should be understood that term "include" or "have"indicates that a feature, a number, a step, an operation, a component, a part or the combination thereof described in the specification is present, but does not exclude a possibility of presence or addition of one or more other features, numbers, steps, operations, components, parts or combinations thereof, in advance.

[0087] The present disclosure discloses a management device 1.

[0088] The management device 1 may be configured to manage an article such that the conditions of the article

are maintained while the article is accommodated therein and may also be configured to manage the article such that the article is visible from the outside.

[0089] The articles described herein may include one or more of articles such as shoes, wallets, bags, dolls, toys, plastic models, accessories, souvenirs, and other collections. That is, the management device 1 may be configured to manage one or more of various articles such as shoes, wallets, bags, dolls, toys, plastic models, accessories, souvenirs, and other collections.

[0090] Shoes described herein may be replaced with one or more of wallets, bags, dolls, toys, plastic models, accessories, souvenirs, and other collections.

[0091] In describing the management device 1 according to an embodiment of the present disclosure, shoes will be described as objects to be managed, and accordingly, the management device 1 will be referred to as a shoe care device 1.

[0092] When the shoe is directly exposed to dust, water, heat, and/or sunshine, a fiber material of the shoe may be damaged over time, and a color and a form of the shoe may be changed.

[0093] In order to keep the shoe in an original state (e.g., a state of the shoe at the time of purchase or a state of a clean shoe) for a long time, the shoe should not be exposed much to light and the shoe should be kept at a place that is not too cold or hot. Further, the shoe needs to be kept at a place at which a temperature and a humidity are appropriately maintained.

[0094] Since the shoe made of a leather or suede material is easily colored or has mold, the shoe should be kept in an environment where temperature and humidity are appropriately maintained. A mothball acquired by solidifying pesticides and fragrances have a unique chemical smell that makes it difficult to remove because the smell permeates the shoe when the mothball is kept jointly with the shoe.

[0095] Further, when the shoes are stacked in layers, the form of the shoe may be changed by an applied load.

[0096] Meanwhile, as described above, in recent years, users who collect shoes of popular brands as part of a hobby or financial tech has increased, and the care of the shoe and the display of the shoe has become important needs of users.

[0097] Considering the points, a shoe care device according to an embodiment of the present invention is configured to safely keep the shoe, establish and adjust an environment (e.g., a predetermined range of temperature, humidity, etc.) required for each shoe, and effectively display the shoe, and increase use convenience of the user.

[0098] A first direction X, a second direction Y, and a third direction Z described in the embodiment of the present invention may be directions orthogonal to each other.

[0099] The first direction X and the second direction Y may be directions parallel to a horizontal direction, and the third direction Z may be a direction parallel to a vertical direction. When the first direction X is a direction parallel to the front and rear direction, the second direction Y may be a direction parallel to a left and right direction.

[0100] In describing embodiments of the present invention, except for a case which is particularly differently limited, the first direction X, the second direction Y, and the third direction Z may be appreciated as a front direction, a left direction, and an upper direction, respectively.

[0101] FIG. 1a is a perspective view illustrating a shoe care device 1 according to an embodiment of the present invention. FIG. 1a illustrates a state in which an internal space (hereinafter, referred to as 'accommodation space 10') of the shoe care device 1 is closed. FIG. 1b is a perspective view illustrating a state in which a shoe S is stored in the accommodation space 10 of the shoe care device 1 of FIG. 1a.

[0102] As illustrated I FIGS. 1a and 1b, the shoe care device 1 according to the embodiment is configured to include a body 100 and a moving body 200.

[0103] The body 100 and the moving body 200 form the accommodation space 10 accommodating the shoe S jointly. The body 100 and the moving body 200 are coupled to move with respect to each other. The moving body 200 may be coupled to the body 100 to reciprocally move in a horizontal direction.

[0104] The shoe care device 1 illustrated in FIG. 1a may be changed like the shoe care device 1 illustrated in FIG. 2a. That is, the moving body 200 may slidably move in a first direction X with respect to the body 100, and the shoe care device 1 is transformed from the closed state to the opened state, and the accommodation space 10 may be opened.

[0105] The shoe care device 1 illustrated in FIG. 2a may be changed like the shoe care device 1 illustrated in FIG. 1a again. That is, the moving body 200 may slidably move in an opposite direction to the first direction X with respect to the body 100, and the shoe care device 1 is transformed from the opened state to the closed state, and the accommodation space 10 may be closed.

[0106] As such, in the shoe care device 1 according to the embodiment of the present invention, the moving body 200 may move the first direction X or the opposite direction to the first direction X with respect to the body 100, and reciprocally move in front and rear directions.

[0107] In the state in which the accommodation space 10 is closed, the accommodation space 10 may be sealed from outside air. Therefore, when the shoe S is accommodated in the accommodation space 10 and the accommodation space 10 is closed, a contact of the shoe S with dust and moisture of the outside air may be interrupted.

[0108] According to an embodiment of the present disclosure, a moving body 200 may be moved relative to a main body 100 manually or automatically. That is, in the former case, a user may hold a portion of the moving body 200 and move the moving body 200, and in the latter case, the moving body 200 may be moved by a separate actuator.

[0109] The body 100 may form an upper surface and a rear surface of the accommodation space 10.

[0110] The moving body 200 may form a front surface, a lower surface, and both side surfaces of the accommodation space 10.

[0111] The accommodation space 10 may be formed in a hexahedral form. However, the accommodation space 10 of the shoe care device 1 according to the embodiment of the present invention is not limited to such a shape, and may be configured in various three-dimensional shapes.

[0112] The body 100 and the moving body 200 may form an overall appearance of the shoe care device 1. An exterior of the shoe care device 1 may be configured in the hexahedral form. That is, in the state in which the body 100 and the moving body 200 are coupled to each other and the accommodation space 10 is closed, the external appearance of the shoe care device 1 may be configured in the hexahedral form. However, the shoe care device 1 according to the embodiment of the present invention is not limited to such a shape, and may be configured in various three-dimensional shapes.

[0113] The body 100 may include an upper body 130, a middle body 120, and a lower body 110.

[0114] The upper body 130 is positioned at an upper side of the accommodation space 10. The upper body 130 forms the upper surface of the accommodation space 10. The upper body 130 may form an uppermost portion of the shoe care device 1. The upper surface of the upper body 130 may form a flat surface along a substantially horizontal surface. When a plurality of shoe care devices 1 is provided, any one shoe care device 1 may be placed on the upper surface of the upper body 130 of the other one shoe care device 1, and the shoe care devices 1 may be stacked on each other.

[0115] The lower body 110 is positioned below the accommodation space 10. The lower body 110 may form a lowermost portion of the shoe care device 1. The lower body 110 may form a bottom portion of the shoe care device 1.

[0116] The middle body 120 is positioned behind the accommodation space 10. The middle body 120 forms the rear surface of the accommodation space 10. The middle body 120 may connect the upper body 130 and the lower body 110 behind the accommodation space 10. The middle body 120 may form a rear wall surface of the shoe care device 1.

[0117] The body 100 is configured to include the upper body 130, the middle body 120, and the lower body 110, and as a result, the body 100 may form a substantially 'C' form on the side view.

[0118] As described above, the moving body 200 is configured to move forward and backward with respect to the body 100. The moving body 200 may include a base 220, a transparent window 210, and a turntable 230.

[0119] The base 220 may be coupled to the lower body 110 to be slidably movable in the first direction X. The base 220 may form the bottom portion of the moving body 200. The base 220 may be positioned at the upper side of the lower body 110. A bottom surface of the base 220 may be positioned in close contact with or in proximity to the upper surface of the lower body 110.

[0120] The transparent window 210 may form of extending upward from the base 220. The transparent window 210 may form the front surface, and both side surfaces (a left surface and a right surface) of the accommodation space 10. The transparent window 210 may be made of a transparent or translucent material.

[0121] Light inside and outside the accommodation space 10 may pass through the transparent window 210. The transparent window 210 may be made of a material which is weather-resistant to prevent discoloration. The transparent window 210 may be made of an acrylic (PMMA) material which is weather-resistant and scratch-resistant.

[0122] The transparent window 210 may prevent a beam having a predetermined wavelength from being introduced into the accommodation space 10. As an example, the transparent window 210 may be configured to block ultraviolet rays. The ultraviolet rays as an electromagnetic wave in which a wavelength corresponds to 10 to 397 nm shorter than visible rays are light which has a strong chemical action and causes getting sunburn or discoloration.

[0123] As an example, an ultraviolet-proof film may be attached to an inner surface or an outer surface of the transparent window 210. Alternatively, the inner surface or the outer surface of the transparent window 210 may be UV-coated with an ultraviolet-proof agent.

[0124] The transparent window 210 includes a first window 211, a second window 212, and a third window 213. The first window 211 may form the front surface of the accommodation space 10. The second window 212 may form the left surface of the accommodation space 10. The third window 213 may form the right surface of the accommodation space 10.

[0125] In the state in which the shoe S is accommodated in the accommodation space 10, a user may view the shoe S through the transparent window 210. As a result, the shoe care device 1 may be used as a device which may display the shoe S while keeping and caring the shoe S.

[0126] As illustrated in FIG. 1a, in the state in which the moving body 200 is positioned relatively at a rearmost side, the accommodation space 10 may be sealed from the outside air. In this case, the accommodation space 10 may be formed in the hexahedral form. In this case, the moving body 200 may be present at a first location and the shoe care device 1 is in the closed state.

[0127] As illustrated in FIG. 5, in the state in which the moving body 200 moves in the first direction X, the accommodation space 10 may be opened. In this case, an upper portion of the first window 211 is spaced to a front side in the first direction X from the front surface of the upper body 130 to form a gap (hereinafter, referred to as 'first gap').

[0128] In this case, an upper portion of the first window

212 is spaced to a front side in the first direction X from the front surface of the upper body 120 to form a gap (hereinafter, referred to as 'first gap'). The third window 213 is spaced to the front side in the first direction X from a right side surface of the middle body 120 to form a gap (hereinafter, referred to as 'third gap').

[0129] In the state in which the moving body 200 moves in the first direction X as much as possible, i.e., in the state in which the moving body 200 is positioned relatively at a frontmost side, the moving body 200 may be present at a second location and the shoe care device 1 may be in the opened state.

[0130] The user may put the shoe S into the accommodation space 10 or withdraw the shoe S from the accommodation space 10 through the first gap. The user may access the interior of the accommodation space 10 through the second gap and the third gap.

[0131] The turntable 230 may form the upper surface on which the shoe S is placed. The upper surface of the turntable 230 may have a circular shape. The turntable 220 may form the lower surface of the accommodation space 10 jointly with the base 220.

[0132] The turntable 230 may be rotatably coupled to the base 220 around a vertical axis, i.e., an axis parallel to a third direction Z.

[0133] For the rotation of the turntable 230, a motor 290 may be provided in the moving body 200. The motor 290 may be coupled to the base 220. The turntable 230 may rotate in conjunction with the rotation of the motor 290. Rotational force of the motor 290 may be delivered to the turntable 230 through a reducer. The motor 290 may rotate unidirectionally or reciprocally rotate bidirectionally.

[0134] The turntable 230 is provided, and as a result, the shoe S may rotate in the accommodation space 10 or a display effect of the shoe S may be enhanced.

[0135] Meanwhile, the shoe care device 1 according to an embodiment of the present disclosure have a concave lower body groove 119 in the upper central portion of the lower body 110. The lower body groove 119 may have a shape that is open toward the front side of the lower body 110. When the main body 100 and the moving body 200 are coupled, the motor 290 may be placed in the lower body groove 119.

[0136] The shoe care device 1 may include an operating button 610 and a controller 600. The operating button 610 may be formed in the body 100. As an example, the operating button 610 may be formed on the front surface of the upper body 130. When the user manipulates the operating button 610, the turntable 230 may rotate or stop. The user manipulates the operating button 610 to adjust a rotational speed of the turntable 230. The user may input a rotation time of the turntable 230 into the controller 600 through the operating button 610.

[0137] The user manipulates the operating button 610 to rotate the turntable 230 at a predetermined angle. In the state in which the accommodation space 10 is opened, the user may place the shoe S on the upper surface of the turntable 230 by holding any one part (heel top, lining, tong, etc.) of the shoe S. Thereafter, the user manipulates the operating button 610 to rotate the turntable 230 at a predetermined angle.

[0138] As an example, the user manipulates the operating button 610 to rotate the turntable 230 at a predetermined angle so that a front and rear direction of the shoe S coincides with the first direction X. Alternatively, the user manipulates the operating button 610 to rotate the turntable 230 at a predetermined angle so that the front and rear direction of the shoe S form a predetermined angle with the first direction X.

[0139] Therefore, even though the user places the shoe S on the upper surface of the turntable 230 while gripping any one part of the shoe S, the shoe S may be placed (displaced) in a direction desired by the user.

[0140] A sensor (not illustrated) that senses movement of the moving body 200 may be provided in the body 100. When the accommodation space 10 is closed, the controller 600 may rotate the turntable 230 by a signal of the sensor.

[0141] A load sensor (not illustrated) may be provided in the base 220. The load sensor may automatically measure a load of the shoe S placed on the turntable 230. The rotational speed of the turntable 230 according to a measurement value of the load sensor may be set in the controller 600. Alternatively, the user may input the rotational speed of the turntable 230 according to the measurement value of the load sensor into the controller 600 through the operating button 610.

[0142] A camera (not illustrated) may be provided in the shoe care device 1. The camera may automatically shoot the shoe S placed on the turntable 230. The controller 600 may recognize the shape, size, and/or type of the shoe S through a shooting image of the camera.

[0143] The rotational speed of the turntable 230 according to the shape, size, and/or type of the shoe S may be set in the controller 600. Alternatively, the user may input the rotational speed of the turntable 230 according to the shape, size, and/or type of the shoe S into the controller 600 through the operating button 610.

[0144] The shoe care device 1 may include an operating sensor. The operating sensor may sense an access of the user. The turntable 230 may be rotated or stopped by the sensing signal of the operating sensor.

[0145] FIG. 2a is a front view illustrating the use state of the shoe care device 1 of FIG. 1b. FIG. 2b illustrates an air flow in the accommodation space 10.

[0146] FIG. 2b is a side view illustrating a use state of the shoe care device 1 of FIG. 1b. FIG. 2b illustrates a state of illuminating the shoe S in the accommodation space 10.

[0147] The shoe care device 1 according to the embodiment of the present invention may include a first light 410. The first light 410 may be provided in the upper body 130.

[0148] As illustrated in FIG. 2b, the first light 410 may illuminate the accommodation space 10. The first light

410 may include a light source 411.

[0149] The light source 411 may intensively irradiate light onto the upper surface of the turntable 230 on which the shoe S is placed. The light of the light source 411 may intensively illuminate the shoe S placed on the upper surface of the turntable 230. When the light 410 is turned, an image of the shoe S stored in the accommodation space 10 may be changed by the light of the light source 411..

[0150] When the user manipulates the operating button 610, the light source 411 may be turned on or off. The user may input an operating time of the light source 411 into the controller 600 through the operating button 610. The user manipulates the operating button 610 to adjust the operating time of the light source 411.

[0151] Alternatively, the light source 411 may be turned on or off by the sensing signal of the operating sensor. The controller 600 may turn on-off the light source by the signal of the operating sensor.

[0152] Alternatively, the light source 411 may be turned on or off by the sensing signal of the sensor. When the accommodation space 10 is closed, the controller 600 may turn on-off the light source by the signal of the sensor.

[0153] Alternatively, the operating time and the operating pattern of the light source according to the measurement value of the load sensor may be set in the controller 600. The user may input the operating time and the operating pattern of the light source 411 according to the measurement value of the load sensor into the controller 600 through the operating button 610.

[0154] Alternatively, the operating time and the operating pattern of the light source according to the shape, size, and/or type of the shoe S may be set in the controller 600. The user may input the operating time and the operating pattern of the light source 411 according to the shape, size, and/or type of the shoe S into the controller 600 through the operating button 610.

[0155] The light source 411 may be configured to change the color of the light. As an example, the light source 411 may be constituted by Red Green Blue White (RGBW) LEDs. The controller 600 may control current applied to a Red (R) LED, a Green (G) LED, a Blue (B) LED, and a White (W) LED. When the controller 600 controls the current applied to the RGBW LEDs, the aesthetics and a color sense of the shoe S stored in the accommodation space 10 may be variously changed. The user may input a pattern of the current applied to the RGBW LED into the controller 600 through the operating button 610.

[0156] FIG. 3a as a cross-sectional view illustrating a body 100 according to an embodiment of the present invention is a diagram showing an upper body 130 taken along line A-A' of FIG. 2a.

[0157] FIG. 3b as a cross-sectional view illustrating the body 100 according to an embodiment of the present invention is a diagram illustrating the upper body 130 from the bottom.

[0158] The body 100 may be configured to include an air path 300. The body 100 may be configured to include a suction port 310 and a discharge port 320.

[0159] The air path 300 may be formed in the upper body 130. The air path 300 may be provided inside the upper body 130.

[0160] The air path 300 connects the suction port 310 and the discharge port 320. The suction port 310 may form an inlet of the air path 300, and the discharge port 320 may form an outlet of the air path 300.

[0161] The suction port 310 may be formed on a bottom surface of the upper body 130. The discharge port 320 may be formed on the bottom surface of the upper body 130.

[0162] The air in the accommodation space 10 may be suctioned into the air path 300 through the suction port 310. The air in the air path 300 may be discharged to the accommodation space 10 through the discharge port 320. Therefore, air forcibly blown by a blowing part 330 to be described below may be circulated in the accommodation space 10 and the air path 300.

[0163] As illustrated in FIG. 3a, the shoe care device 1 according to the embodiment of the present invention may include the blowing part 330 and a heating part 340. The blowing part 330 and the heating part 340 may be provided in the upper body 130.

[0164] The blowing part 330 is configured to circulate the air in the accommodation space 10.

[0165] The blowing part 330 may be positioned in the upper body 130. The blowing part 330 may be placed in the air path 300, and may generate a flow of the air in the air path 300.

[0166] The heating part 340 may be configured to directly or indirectly heat the air in the accommodation space 10. The heating part 340 may be placed in the body 100. The heating part 340 may be placed in the air path 300.

[0167] The body 100 may be configured to include the first light 410 and a second light 420. The first light 410 may be configured to be formed on the bottom surface of the upper body 130 and to illuminate the accommodation space 10. The second light 420 may be configured to be formed on the bottom surface of the upper body 130 and to illuminate the middle body 120 behind the first light 410.

[0168] The heating part 340 may deliver thermal energy to the air which moves in the air path 300. The heating part 340 may be configured to include a heat wire 341.

[0169] The blowing part 330 and the heating part 340 may control the temperature and/or humidity of the accommodation space 10..

[0170] When the user manipulates the operating button 610, the blowing part 330 may rotate or stop. The user manipulates the operating button 610 to adjust the rotational speed of the blowing part 330. The user may input the rotation time of the blowing part 330 into the controller through the operating button 610. The air in the accom-

modation space 10 may be circulated by operating the blowing part 330, and the air in the accommodation space 10 may maintain a uniform state as a whole.

[0171] When the user manipulates the operating button 610, the heating part 340 may be turned on or off. The user manipulates the operating button 610 to adjust the operating time of the heating part 340. The user may input an operating temperature of the heating part 340 into the controller through the operating button 610. The temperature of the air heated by the heating part 340 may be selected or adjusted according to characteristics of a used shoe S.

[0172] The blowing part 330 and the heating part 340 may be operated for a predetermined time. Further, each of the operating and the stopping of the blowing part 330 and the heating part 340 may be repeatedly conducted for a predetermined time. The time may be decided by the user, or automatically decided by a program.

[0173] According to the embodiment of the present invention, the temperature and/or the humidity of the accommodation space 10 may be maintained at an optimal state which is suitable for the characteristics of each shoe S.

[0174] Therefore, the shoe care device 1 according to the embodiment of the present invention may achieve both a shoe display effect of displaying the shoe and a shoe care effect of interrupting deformation or contamination of the shoe.

[0175] The blowing part 330 and the heating part 340 may be turned on or off by the sensing signal of the sensor. When the accommodation space 10 is closed, the controller 600 may turn on-off the blowing part 330 and the heating part 340 by the signal of the sensor.

[0176] Alternatively, the operating time and the operating pattern of the blowing part 330 and the heating part 340 according to the measurement value of the load sensor may be set in the controller. The user may input the operating time and the operating pattern of the blowing part 330 and the heating part 340 according to the measurement value of the load sensor into the controller through the operating button.

[0177] Alternatively, the operating time and the operating pattern of the blowing part 330 and the heating part 340 according to the shape, size, and/.or type of the shoe may be set in the controller. The user may input the operating time and the operating pattern of the blowing part 330 and the heating part 340 according to the shape, size, and/.or type of the shoe into the controller through the operating button.

[0178] Therefore, the shoe care device 1 according to the embodiment of the present invention controls the temperature and/or the humidity of the accommodation space 10 differently according to a material, a load, the shape, the size, and/or the type of the shoe to completely interrupt the deformation or the contamination of the shoe.

[0179] The lower body 100 of the body 100 forms the bottom surface of the shoe care device 1. The lower body 110 may be configured to support the lower side of the moving body 200.

[0180] The middle body 120 of the body 100 extends upward from a rear side of the lower body 110 and forms a back surface of the shoe care device 1. The inner surface of the middle body 120 forms the back surface of the accommodation space 10.

[0181] The upper body 130 of the body 100 extends forward from the upper side of the middle body 120 and forms the upper surface of the shoe care device 1. The inner surface of the upper body 130 may forms the upper surface of the accommodation space 10. The upper body 130 may be configured to support the upper side of the moving body 200.

[0182] The body 100 may be configured in a symmetric form around a reference plane RP orthogonal to the second direction Y.

[0183] The moving body 200 forms the accommodation space 10 jointly with the body 100. The moving body 200 may be movably coupled to the body 100 between a first location and a second location. The second location is a location before the first location. The moving body 200 may be coupled to the body 100 to be movable forward and backward with respect to the body 100.

[0184] When the moving body 200 is at the first location, the accommodation space 10 is closed and when the moving body 200 is at the second location, the accommodation space 10 is opened.

[0185] When the moving body 200 is at the second location, the accommodation space 10 of the shoe care device 1 is opened at the upper side, the left side, and the right side.

[0186] When the moving body 200 moves forward and backward with respect to the body 100, the moving body 200 may be supported by the lower body 110 and the upper body 130.

[0187] When the moving body 200 is at the first location, both left and right sides at the upper side and both left and right sides at the lower side of the moving body 200 are supported by the body 100. When the moving body 200 is at the second location, both left and right sides at the upper side and both left and right sides at the lower side of the moving body 200 may be supported by the body 100.

[0188] The moving body 200 may be symmetrical about a reference plane RP.

[0189] In the embodiment of the present invention, the transparent window 210 may be integrally configured. That is, respective parts constituting the transparent window 210 is not configured to be connected or fixed to each other by a fixation means (e.g., a bracket, a clip, a bolt, an adhesive, etc.), but the transparent window 210 may be configured as one body from the time of manufacturing. All parts constituting the transparent window 210 may be made of the same material. All parts constituting the transparent window 210 may be configured to have the same made of the same physical property.

[0190] In the shoe care device 1 according to the

embodiment of the present invention, the transparent window 210 may be formed by injection molding.

[0191] A substantial part of the transparent window 210 or all parts of the transparent window 210 may be configured to be transparent.

[0192] The transparent window 210 may be configured by a combination of plates constituting planes which are distinguished from each other. The plates constituting the transparent window 210 are connected to each other. The plates constituting the transparent window 210 are connected to each other at respective corners. A part where the plates are connected in the transparent window 210 may form a bent form, a curved surface, or a flat surface.

[0193] The transparent window 210 may be made of polymethyl methacrylate (PMMA).

[0194] The transparent window 210 includes a first window 211, a second window 212, and a third window 213. Each of the first window 211, the second window 212, and the third window 213 is configured to be transparent. Each of the first window 211, the second window 212, and the third window 213 may be configured in a flat plate form. Each of the first window 211, the second window 212, and the third window 213 may be configured in a square plate form. Vertical heights of the respective windows of the first window 211, the second window 212, and the third window 213 may be the same as or similar to each other.

[0195] The first window 211 forms the front surface of the shoe care device 1, the second window 212 forms the left surface of the shoe care device 1, and the third window 213 forms the right surface of the shoe care device 1. The second window 212 extends to a rear side from a left end of the first window 211, and the third window 213 extends to the rear side from a right end.

[0196] The first window 211 forms the front surface of the transparent window 210, the second window 212 forms the left surface of the transparent window 210, and the third window 213 forms the right surface of the transparent window 210. An inner surface and an outer surface of the first window 211 may form surfaces orthogonal to the first direction. The inner surface and the outer surface of the second window 212 may form surfaces orthogonal to the second direction. The inner surface and the outer surface of the third window 213 may form surfaces orthogonal to the second direction.

[0197] The inner surface of the first window 211 forms the front surface of the accommodation space 10. The inner surface of the second window 212 forms the left surface of the accommodation space 10. The inner surface of the third window 213 forms the right surface of the accommodation space 10.

[0198] The transparent window 210 includes the first window 211, the second window 212, and the third window 213, and as a result, the transparent window 210 may be configured in a substantially C shape (or $\subset$ shape, Π shape, or $\sqsupset$ shape) on a plan view.

[0199] The transparent window 210 may be configured in a symmetric form around the reference plane RP. The second window 212 and the third window 213 may be configured symmetric to each other around the reference plane RP.

[0200] In the shoe care device 1, the upper body 130 and the first window 211 may be opened/closed to each other, the middle body 120 and the second window 212 may be opened/closed to each other, and the middle body 120 and the third window 213 may be opened/-closed to each other.

[0201] The lower side of the second window 212 and the lower side of the third window 213 may be supported on the lower body 110.

[0202] The upper side of the second window 212 and the upper side of the third window 213 may be supported on the upper body 130.

[0203] In the shoe care device 1 according to the embodiment of the present invention, the transparent window 210 may be integrally formed. In addition, the transparent window 210 may form an area of substantial parts of the front surface, the left surface, and the right surface of the shoe care device 1. An area of the first window 211 may be configured to correspond to the area of the front surface of the accommodation space 10. The area of the second window 212 may be configured to correspond to the area of the left surface of the accommodation space 10. The area of the third window 213 may be configured to correspond to the area of the right surface of the accommodation space 10.

[0204] According to the embodiment of the present invention, the area of the transparent window 210 may be maximized, the shoe S accommodated in the accommodation space 10 may not be blocked, but well viewed at all of the front side, the left side, and the right side, and the display effect of the shoe S may be increased.

[0205] Unlike the embodiment of the present invention, when the transparent window 210 is formed only on the front surface of the shoe care device 1, the shoe S may not be viewed at the left side or the right side of the shoe care device 1, and the display effect of the shoe may not be sufficiently shown.

[0206] Unlike the embodiment of the present invention, if the first window 211 and the second window 212 are not integrally configured (further, if the first window 211 and the third window 213 are not integrally configured), a boundary between the first window 211 and the second window 212 (further, a boundary between the first window 211 and the third window 213) is viewed to the user, and the boundary may visually block the shoe inside the accommodation space 10 and the display effect of the shoe may be reduced, and the satisfaction of the user may be lowered. Further, a gap may be generated between the boundaries, and foreign substances may be introduced into the accommodation space 10 through the gap.

[0207] The base 220 is fixedly coupled to the lower side of the transparent window 210 to form a lower portion of the moving body 200. An entire form of the base 220 may

be configured as a flat form in the horizontal direction. The base 220 may be configured in the square form on the plan view.

[0208] The base 220 may be configured so that the shoe S is placed at the upper side of the base 220. An upper surface of the base 220 may be configured substantially in the square form.

[0209] The base 220 is positioned at the upper side of the lower body 110. The upper surface of the base 220 is positioned at the upper side of the lower body 110. The base 220 is coupled to the lower body 110 to be movable forward and backward.

[0210] The turntable 230 is rotatably coupled around a perpendicular rotational axis (the rotational axis aligns with the center axis of the turntable 230) at the upper side of the base 220. The turntable 230 is configured in a circular plate form. The upper surface of the turntable 230 may be configured to be in parallel to the first direction X and the second direction Y.

[0211] The height of the upper surface of the base 220 may be configured to correspond to or coincide with the height of the upper surface of the turntable 230.

[0212] While the transparent window 210 and the base 220 move forward with respect to the body 100, the shoe may be seated on the base 220 or the show may be withdrawn from the base 220 through the space between the upper body 130 and the first window 211. Further, in this case, the user may access the shoe or an upper space through the space between the middle body 120 and the second window 212 or between the middle body 120 and the third window 213. Further, in this case, the user easily accesses the inner surface of each of the lower body 110, the middle body 120, and the upper body 130.

[0213] According to the embodiment of the present invention, it is convenient to withdraw and insert the shoe from and into the shoe care device 1, and positioning the shoe is convenient.

[0214] As described above, the moving body 200 is configured to include the turntable 230 in the shoe care device 1 according to the embodiment of the present invention. Therefore, a shoe care device 1 may be provided in which both circulation of the air and rotation of the shoe are conducted in the accommodation space 10, and as a result, both the management of the shoe and the display effect of the shoe are excellent.

[0215] The moving body 200 may be configured to include a lower guard 240. The lower guard 240 is fixedly coupled to an outer side of a border of the base 220. The lower guard 240 is fixedly coupled to a front surface, a left surface, and a right surface of the base 220.

[0216] The lower guard 240 may be configured substantially in the C shape (or $\subset$ shape, Π shape, or $\sqsupset$ shape) on the plan view. On the plan view, the shape of the lower guard 240 may be configured to correspond to the shape of the transparent window 210.

[0217] The lower guard 240 may be positioned outside the lower body 110.

[0218] FIG. 4 is a perspective view illustrating a moving body 200 according to an embodiment of the present disclosure.

[0219] FIG. 5 is a perspective view illustrating an accommodation space 10 in the opened state in the shoe care device 1 according to an embodiment of the present disclosure.

[0220] The transparent window 210 may be configured to include a first fin portion 212a and a second fin portion 213a (see FIG. 4).

[0221] The first fin portion 212a extends to the upper side from the rear side of the second window 212. The first fin portion 212a is configured to protrude upward on a rear upper end of the second window 212.

[0222] The first fin portion 212a is configured in a flat plate form. The first fin portion 212a configured integrally with the second window 212 may be configured to be transparent.

[0223] The inner surface of the first fin portion 212a may form the same plane as the inner surface of the second window 212. The outer surface of the first fin portion 212a may form the same plane as the inner surface of the second window 212.

[0224] The inner surface of the first fin portion 212a may be configured to be stepped with the inner surface of the second window 212. The outer surface of the first fin portion 212a may be configured to be stepped with the inner surface of the second window 212.

[0225] The second fin portion 213a extends upward on the rear side of the third window 213. The second fin portion 213a is configured to protrude upward on the rear upper end of the third window 213.

[0226] The second fin portion 213a is configured in the flat plate form. The second fin portion 213a configured integrally with the third window 213 may be configured to be transparent.

[0227] The inner surface of the second fin portion 213a may form the same plane as the inner surface of the third window 213. The inner surface of the second fin portion 213a may form the same plane as the inner surface of the third window 213.

[0228] The inner surface of the second fin portion 213a may be configured to be stepped with the inner surface of the third window 213. The outer surface of the second fin portion 213a may be configured to be stepped with the inner surface of the third window 213.

[0229] The upper body 130 may be configured to include a first insertion groove 131, a first stopper 132, a second insertion groove 133, and a second stopper 134 (see FIG. 3b).

[0230] The first insertion groove 131 is configured in a narrow gap or slit form so that the first fin portion 212a is inserted and moves. The first insertion groove 131 is formed on the bottom of the upper body 130 in the first direction.

[0231] The first stopper 132 is configured to be provided in front of the first insertion groove 131 to prevent forward movement of the first fin portion 212a. When the

moving body 200 is at the second location, the front end of the first fin portion 212a touches the rear end of the first stopper 132.

[0232] The second insertion groove 133 is configured in the narrow gap or slit form so that the second fin portion 213a is inserted and moves. The second insertion groove 133 is formed on the bottom of the upper body 130 in the first direction.

[0233] The second stopper 134 is configured to be provided in front of the second insertion groove 133 to prevent forward movement of the second fin portion 213a. When the moving body 200 is at the second location, the front end of the second fin portion 213a touches the rear end of the second stopper 134.

[0234] As configured as described above, when the moving body 200 moves between the first location and the second location with respect to the body 100, the first fin portion 212a may slidably move stably forward and backward along the first insertion groove 131, and the second fin portion 213a may slidably move stably forward and backward along the second insertion groove 133.

[0235] In addition, when the moving body 200 is at the second location, the first fin portion 212a is prevented from forward movement while being inserted into the first insertion groove 131 by the first stopper 132, and the second fin portion 213a is prevented from forward movement while being inserted into the second insertion groove 133 by the second stopper 134, and the upper side of the moving body 200 is stably supported by the body 100.

[0236] As described above, in the shoe care device 1 according to the embodiment of the present invention, at the first location and the second location, the lower side of the transparent window 210 is supported on the lower body 110 of the body 100 through the base 220 and the lower guard 240. In addition, when the moving body 200 is at the second location, both the left and right sides at the upper side and both the left and right sides at the lower side of the moving body 200 are supported by the body 100. Therefore, in the state in which the moving body 200 moves forward with respect to the body 100 as possible, the accommodation space 10 may be opened at the upper side, the left side, and the right side, and the shoe may be inserted into the accommodation space 10 or the shoe may be withdrawn from the accommodation space 10, and in this case, the upper side and the lower side of each of the second window 212 and the third window 213 are supported by the body 100, and stable coupling between the body 100 and the moving body 200 is maintained.

[0237] The transparent window 210 may be configured to include a third fin portion 212b and a fourth fin portion 213b (see FIG. 4).

[0238] The third fin portion 212b extends backward on the rear end of the second window 212.

[0239] The third fin portion 212b is configured to protrude backward on the rear end of the second window 212.

[0240] The third fin portion 212b is configured in the flat plate form. The third fin portion 212b configured integrally with the second window 212 may be configured to be transparent.

[0241] The inner surface of the third fin portion 212b may form the same plane as the inner surface of the second window 212. The outer surface of the third fin portion 212b may form the same plane as the inner surface of the second window 212.

[0242] The inner surface of the third fin portion 212b may be configured to be stepped with the inner surface of the second window 212. The outer surface of the third fin portion 212b may be configured to be stepped with the inner surface of the second window 212.

[0243] The inner surface of the third fin portion 212b may form the same plane as the inner surface of the first fin portion 212a and the outer surface of the third fin portion 212b may form the same plane as the outer surface of the first fin portion 212a.

[0244] A thickness of the third fin portion 212b may be configured to be the same as the thickness of the first fin portion 212a. Each of the thickness of the first fin portion 212a and the thickness of the third fin portion 212b may be configured to be thinner than the thickness of the second window 212.

[0245] The fourth fin portion 213b extends backward on the rear end of the third window 213.

[0246] The fourth fin portion 213b is configured to protrude backward on the rear end of the third window 213.

[0247] The fourth fin portion 213b is configured in the flat plate form. The fourth fin portion 213b configured integrally with the third window 213 may be configured to be transparent.

[0248] The inner surface of the fourth fin portion 213b may form the same plane as the inner surface of the third window 213. The outer surface of the fourth fin portion 213b may form the same plane as the inner surface of the third window 213.

[0249] The inner surface of the fourth fin portion 213b may be configured to be stepped with the inner surface of the third window 213. The outer surface of the fourth fin portion 213b may be configured to be stepped with the inner surface of the third window 213.

[0250] The inner surface of the fourth fin portion 212b may form the same plane as the inner surface of the second fin portion 213a and the outer surface of the fourth fin portion 213b may form the same plane as the outer surface of the second fin portion 213a.

[0251] The thickness of the fourth fin portion 213b may be configured to be the same as the thickness of the second fin portion 213a. Each of the thickness of the second fin portion 213a and the thickness of the fourth fin portion 213b may be configured to be thinner than the thickness of the third window 213.

[0252] The middle body 120 may be configured to include a third insertion groove 121 and a fourth insertion groove 122. The third insertion groove 121 is configured

in the narrow gap or slit form so that the third fin portion 212b is inserted. The third insertion groove 121 is formed on the front surface of the middle body 120 in the third direction. The fourth insertion groove 122 is configured in the narrow gap or slit form so that the fourth fin portion 213b is inserted. The fourth insertion groove 122 is formed on the front surface of the middle body 120 in the third direction. The third insertion groove 121 may be formed adjacent to one edge of the middle body 120, and the fourth insertion groove 122 may be formed adjacent to the edge of the middle body 120 opposite to the third insertion groove 121. (see FIG. 5)

[0253] As configured as described above, when the moving body 200 is at the first location, the third fin portion 212b is inserted into the third insertion groove 121 and the fourth fin portion 213b is inserted into the fourth insertion groove 122, and the moving body 200 and the body 100 are stably coupled, and the accommodation space 10 is effectively sealed.

[0254] FIG. 6A is a cross-sectional view illustrating a portion of the shoe care device 1 according to an embodiment of the present disclosure.

[0255] FIG. 6B is a cross-sectional view illustrating the portions where sliding rails 250 and brackets 260 are coupled in the shoe care device 1 according to an embodiment of the present disclosure.

[0256] FIG. 7 is a cross-sectional view illustrating a portion of the shoe care device 1 according to an embodiment of the present disclosure.

[0257] FIG. 8A is a perspective view illustrating the state in which the brackets 260 and the sliding rails 250 are coupled to a lower body 110 of the shoe care device 1 according to an embodiment of the present disclosure, and FIG. 8B is a perspective view illustrating the state in which the sliding rails 250 in FIG. 8A are moved.

[0258] FIG. 9 is a perspective view illustrating the bottom side of the moving body 200 of the shoe care device 1 according to an embodiment of the present disclosure.

[0259] The shoe care device 1 according to an embodiment of the present disclosure includes a bracket 260 and a sliding rail 250.

[0260] The bracket 260 is fixedly coupled to the lower body 110. The bracket 260 may be fixed to the lower body 110 by various fixing elements (e.g., bolts, rivets, and clamps), or may be fixed to the lower body 110 by various fixing methods (e.g., hooking and welding).

[0261] The bracket 260 includes a slider 261. The slider 261 may be configured integrally with the bracket 260, or may be configured separately and then fixed to the bracket 260.

[0262] The slider 261 is coupled to the sliding rail 250 to be movable relative to each other.

[0263] The slider 261 is fixedly coupled to the lower body 110 of the main body 100, the sliding rail 250 is fixedly coupled to the base 220 of the moving body 200, and the relative movement direction between the slider 261 and the sliding rail 250 coincides with the relative movement direction of the main body 100 and the moving body 200.

[0264] In the shoe care device 1 according to an embodiment of the present disclosure, the slider 261 and the sliding rail 250 may each be configured in the form of a slide rail. Each of the sliding rail 250 and the slider 261 according to an embodiment of the present disclosure may be configured in the form of a rail such that the sliding rail and the slide move relative to each other in the longitudinal direction (see FIG. 6A).

[0265] In the shoe care device 1 according to an embodiment of the present disclosure, the slider 261 and the sliding rail 250 may be configured in the form of an LM guide or a linear actuator. That is, the sliding rail 250 according to an embodiment of the present disclosure may be configured as a rail of an LM guide or a linear actuator, and the slider 261 according to an embodiment of the present disclosure may be configured as a block (or a carriage or slider) coupled to be movable along the rail of the LM guide or the linear actuator.

[0266] For smooth relative movement between the slider 261 and the sliding rail 250, balls 253 and a retainer 254 may be interposed between the slider 261 and the sliding rail 250.

[0267] The shoe care device 1 may include one or more brackets 260.

[0268] At least a portion of the sliding rail 250 has a constant cross section along the front and rear direction and is coupled to the slider 261 to be movable back and forth. That is, the sliding rail 250 is coupled to the slider 261 to be reciprocally movable in a first direction X relative to the slider 261.

[0269] The sliding rail 250 is coupled to the bottom surface of the base 220. The shoe care device 1 may include one or more sliding rails 250.

[0270] A rail coupling portion 225 may be provided on the bottom surface of the base 220 for coupling with the sliding rail 250. The rail coupling portion 225 may be provided in the first direction X.

[0271] The number and positions of rail coupling portions 225 correspond to the number and positions of the sliding rails 250.

[0272] The sliding rail 250 may be fixed to the base 220 (the rail coupling portion 225) by various fixing elements (e.g., bolts, rivets, and clamps) or by various fixing methods (e.g., hooking and welding).

[0273] In an embodiment, the sliding rail 250 may be fixedly coupled to the base 220 by a bolt 255. The bolt 255 may penetrate a through-hole 252 of the sliding rail 250 to be fastened to the sliding rail 250, and may also be inserted into a fastening hole 225a in the rail coupling portion 225 to be fixed to the rail coupling portion 225. A plurality of bolts 255 may be provided and coupled to the sliding rail 250 and the rail coupling portion 225 while being spaced apart from each other in the longitudinal direction (the first direction X).

[0274] In the shoe care device 1 according to an em-

bodiment of the present disclosure, a plurality of balls 253 may be interposed between the slider 261 and the sliding rail 250 to reduce friction. The balls 253 has a spherical shape. The balls 253 are configured to prevent or reduce direct contact between the slider 261 and the sliding rail 250, thereby reducing the friction force generated between the slider 261 and the sliding rail 250.

[0275] The balls 253 may be supported by a retainer 254. In the retainer 254, holes each having a diameter slightly smaller than the diameter of each ball 253 are in the longitudinal direction, and each ball 253 may be supported while being accommodated in one of the holes of the retainer 254.

[0276] The retainer 254 is provided in the first direction X.

[0277] In the first direction X, the length of the retainer 254 may be smaller than the length of the sliding rail 250 and greater than the length of the slider 261.

[0278] In the first direction X, the sum of the length of the retainer 254 and the length of the slider 261 may be greater than the length of the sliding rail 250.

[0279] When relative movement is made between the slider 261 and the sliding rail 250 with reference to the first direction X, the retainer 254 may move relative to the slider 261 and may move relative to the sliding rail 250.

[0280] There are provided a plurality of balls 253, and the plurality of balls 253 may be spaced apart at predetermined intervals in the relative movement direction (the direction parallel to the first direction X) between the slider 261 and the sliding rail 250.

[0281] When relative movement occurs between the slider 261 and the sliding rail 250, the balls 253 come into rolling contact with the slider 261 and also come into rolling contact with the sliding rail 250.

[0282] In an embodiment of the present disclosure, the slider 261 and the sliding rail 250 may be configured to prevent relative movement in a direction other than the front and rear direction.

[0283] That is, the sliding rail 250 may be configured to move relative to the slider 261 only in a direction parallel to the first direction X and to be prevented from moving in a direction parallel to the second direction Y and a direction parallel to the third direction Z.

[0284] In the shoe care device 1 according to an embodiment of the present disclosure, the slider 261 and the sliding rail 250 may be configured to be prevented from relatively moving in a direction parallel to the second direction Y and in a direction parallel to the third direction Z by the balls 253 interposed therebetween (see FIG. 6A).

[0285] In an embodiment, the slider 261 and the sliding rail 250 may be engaged with each other to prevent relative movement in a direction other than the front and rear direction.

[0286] In the shoe care device 1 according to an embodiment of the present disclosure, the slider 261 and the sliding rail 250 both have a constant cross section along the first direction X, in which the slider 261 may have a first engagement portion 261a, and the sliding rail 250 may include a second engagement portion 251 (see FIG. 7).

[0287] The first engagement portion 261a and the second engagement portion 251 are configured to be engaged with each other when the sliding rail 250 moves in a direction parallel to the second direction Y relative to the slider 261.

[0288] The first engagement portion 261a and the second engagement portion 251 are configured to be engaged with each other when the sliding rail 250 moves in a direction parallel to the third direction Z relative to the slider 261.

[0289] In the shoe care device 1 according to an embodiment of the present disclosure, the sliding rail 250 may include a first engagement ledge 256 and a second engagement ledge 257. The first engagement ledge 256 may be provided on one side of the sliding rail 250 and the second engagement ledge 257 may be provided on the other side of the sliding rail 250. The first engagement ledge 256 and the second engagement ledge 257 may be provided at opposite ends of the sliding rail 250 in the longitudinal direction.

[0290] The first engagement ledge 256 may be formed by bending the front end of the sliding rail 250, and the second engagement ledge 257 may be formed by bending the rear end of the sliding rail 250.

[0291] The slider 261 is coupled to the inside of the sliding rail 250, and the retainer 254 may be interposed between the sliding rail 250 and the slider 261 while supporting each ball 253 inside the sliding rail 250 (see FIGS. 6A and 6B).

[0292] When the sliding rail 250 is located as far rearward as possible relative to the slider 261 (a first position in the closed state), the front end of the slider 261 and the front end of the retainer 254 may be located in contact with or close to the inside of the first engagement ledge 256.

[0293] When the sliding rail 250 is located as far forward as possible relative to the slider 261 (a second position in the open state), the rear end of the slider 261 and the rear end of the retainer 254 may be located in contact with or close to the inside of the second engagement ledge 257.

[0294] The first engagement ledge 256 and the second engagement ledge 257 may maintain the coupling of the sliding rail 250, the balls 253, the retainer 254, and the slider 261 to limit the range of movement to move in a predetermined stroke when the sliding rail 250 reciprocally moves along the first direction X relative to the slider 261.

[0295] In the shoe care device 1 according to an embodiment of the present disclosure, two brackets 260 and two sliding rails 250 may be provided to be symmetrically spaced apart on both left and right sides, respectively, with respect to the center of the shoe care device 1. That is, two brackets 260 may be arranged symmetrically with reference to a reference plane RP that vertically crosses

the center of the shoe care device 1, and two sliding rails 250 may be arranged symmetrically with reference to the reference plane RP.

[0296] As described above, in the shoe care device 1 according to an embodiment of the present disclosure, the moving body 200 is moved stably and smoothly relative to the main body 100 by the slider 261 of the bracket 260 and the sliding rail 250.

[0297] In the shoe care device 1 according to an embodiment of the present disclosure, the friction generated between the slider 261 and the sliding rail 250 is reduced to allow the user to easily open or close the moving body 200 from the main body 100 with relatively small force, and the sliding rail 250 is moved relative to the slider 261 along the front and rear direction to ensure stable movement of the moving body 200.

[0298] FIG. 10A is a view schematically illustrating the lower body 110 of the shoe care device 1 according to an embodiment of the present disclosure. FIG. 10B is a diagram schematically illustrating a state in which the moving body 200 moves forward relative to the main body 100 in the shoe care device 1 according to an embodiment of the present disclosure.

[0299] In the shoe care device 1 according to an embodiment of the present disclosure, the bracket 260 may be located adjacent to the front end of the lower body 110. The bracket 260 may be coupled to the lower body 110 such that the front end of the bracket 260 coincides with the front end of the lower body 110.

[0300] In the shoe care device 1 according to an embodiment of the present disclosure, the bracket 260 and the sliding rail 250 may be completely shielded by the base 220 when viewed from above.

[0301] That is, when viewed from above, the bracket 260 and the sliding rail 250 may be completely covered by the base 220 at the first position, and the bracket 260 and the sliding rail 250 may also be completely covered by the base 220 at the second position.

[0302] In the shoe care device 1 according to an embodiment of the present disclosure, with reference to the first direction X, the length RD of the sliding rail 250 may be equal to or slightly greater than the length BD of the lower body 110.

[0303] In the shoe care device 1 according to an embodiment of the present disclosure, the length RD of the sliding rail 250 in the front and rear direction may be 0.9 times or more and 1 times or less the length BD of the lower body 110 in the front and rear direction.

[0304] In addition, the lengths of the bracket 260 and the slider 261 in the front and rear direction is smaller than the length of the sliding rail 250 in the front and rear direction. With reference to the first direction X, the lengths of the bracket 260 and the slider 261 may be equal to or smaller than 1/2 of the length of the sliding rail 250. With reference to the first direction X, the lengths of the bracket 260 and the slider 261 may be equal to or smaller than 1/3 of the length of the sliding rail 250. With reference to the first direction X, the lengths of the bracket 260 and the slider 261 may be 1/4 to 1/2 of the length of the sliding rail 250.

[0305] With reference to the first direction X, the lengths of the bracket 260 and the slider 261 may be equal to or smaller than the overlapping length of the lower body 110 and the base 220 when the moving body 200 is located at the second position.

[0306] A sliding groove 111 is provided on the upper side of the lower body 110.

[0307] The sliding groove 111 is provided in the shape of a concave groove on the upper side of the lower body 110 and is elongated along the first direction X. The sliding groove 111 extends rearward from the front end of the lower body 110. The sliding groove 111 may be provided up to a point adjacent to the rear end of the lower body 110, or may be provided up to the rear end of the lower body 110.

[0308] The bracket 260 is accommodated in the sliding groove 111 and fixed to the lower body 110.

[0309] In addition, the sliding rail 250 is accommodated in the sliding groove 111.

[0310] Of course, a plurality of sliding grooves 111 are provided when a plurality of brackets 260 and sliding rails 250 are provided.

[0311] When the brackets 260 and the sliding rails 250 are arranged symmetrically with respect to the reference plane RP, the sliding grooves 111 may also be arranged symmetrical with respect to the reference plane RP.

[0312] The sliding groove 111 may be divided into a first sliding groove 111a and a second sliding groove 111b.

[0313] The first sliding groove 111a extends rearward from the front end of the lower body 110. The first sliding groove 111a may have a constant cross section along the first direction X.

[0314] The bracket 260 may be accommodated in the first sliding groove 111a and fixed to the lower body 110 while being fixed to the bottom surface of the first sliding groove 111a.

[0315] The second sliding groove 111b extends rearward from the rear end of the first sliding groove 111a. The second sliding groove 111a may have a constant cross section along the first direction X.

[0316] The second sliding groove 111b may be provided up to a point adjacent to the rear end of the lower body 110, or may be provided up to the rear end of the lower body 110.

[0317] With reference to the first direction X, the length of the second sliding groove 111b may be greater than the length of the first sliding groove 111a.

[0318] With reference to the first direction X, the length of the first sliding groove 111a may be equal to or smaller than 1/2 of the length of the lower body 110. With reference to the first direction X, the length of the first sliding groove 111a may be equal to or smaller than 1/3 of the length of the lower body 110. With reference to the first direction X, the length of the first sliding groove 111a may be in the range of 1/4 to 1/2 of the length of the lower body 110.

[0319] At the first position, the sliding rail 250 is accommodated in the first sliding groove 111a and the second sliding groove 111b.

[0320] At the second position, the sliding rail 250 moves in the first direction X and protrudes in front of the first sliding groove 111a.

[0321] The lower guard 240 of the moving body 200 defines an edge of the base 220 and is located outside the lower body 110 on the front, left, and right sides. Accordingly, the lower guard 240 shields the bracket 260 and the sliding rail 250 at the front side of the shoe care device 1, and also shields the sliding groove 111.

[0322] As described above, in the shoe care device 1 according to an embodiment of the present disclosure, when the moving body 200 moves along the first direction X relative to the main body 100, the moving body 200 can move a sufficiently long distance. Thus, the accommodation space 10 can be opened easily, stable coupling between the slider 261 of the bracket 260 and the sliding rail 250 can be maintained, the bracket 260 and sliding rail 250 can be prevented from being visible from the outside, foreign substances such as dust can be prevented from penetrating into the bracket 260 and the sliding rail 250.

[0323] FIG. 11 is a perspective view schematically illustrating the state in which the sliding rail 250 and the slider 261 are coupled in the shoe care device 1 according to an embodiment of the disclosure.

[0324] FIG. 12 is a cross-sectional view illustrating the state in which the sliding rail 250 and the bracket 260 are coupled in the shoe care device 1 according to an embodiment of the present disclosure.

[0325] In the shoe care device 1 according to an embodiment of the present disclosure, the sliding rail 250 may be in the form of a multi-stage rail. That is, the overall length of the sliding rail 250 may be configured to be varied. The sliding rail 250 may be in the form of a two-stage rail, a three-stage rail, or the like.

[0326] In the shoe care device 1 according to an embodiment of the present disclosure, the sliding rail 250 may include a first sliding rail 250a and a second sliding rail 250b.

[0327] The first sliding rail 250a may be coupled to the bracket 260 to be movable back and forth.

[0328] The second sliding rail 250b may be coupled to the first sliding rail 250a to be movable back and forth.

[0329] The first sliding rail 250a is coupled to be reciprocally movable relative to the bracket 260 in a direction parallel to the first direction X, but is prevented from moving in a direction other than the first direction X.

[0330] The second sliding rail 250b is coupled to be reciprocally movable relative to the first sliding rail 250a in a direction parallel to the first direction X, but is prevented from moving in a direction other than the first direction X.

[0331] In order to reduce friction between the bracket 260 and the first sliding rail 250a, one or more balls 253 may be interposed between the bracket 260 and the first sliding rail 250a.

[0332] In order to reduce friction between the first sliding rail 250a and the second sliding rail 250b, one or more balls 253 may be interposed between the first sliding rail 250a and the second sliding rail 250b.

[0333] Although specific embodiments of the present disclosure have been described above and illustrated in the figures, it will be understood that the present disclosure is not limited to the described embodiments, and various modifications and changes can be made as other specific embodiments by a person ordinarily skilled in the art without departing from the spirit and scope of the present disclosure. Accordingly, the scope of the present disclosure should not be defined by the described embodiments, but should be defined by the technical idea described in the claims.

[Industrial Applicability]

[0334] The shoe care device according to an embodiment of the present disclosure has significant industrial applicability in view of the fact that the air in the accommodation space can be controlled, the shoes can be completely exposed in various directions through the transparent window so that the shoes can be displayed effectively, and the moving body can be moved smoothly by the slider of the bracket and the sliding rail.

Claims

1. A shoe care device comprising:

a main body comprising a lower body, a middle body extending upward from a rear side of the lower body, and an upper body extending forward from an upper side of the middle body;
a moving body comprising a base located on an upper side of the lower body and a transparent window fixedly coupled to an upper side of the base, wherein the moving body defines an accommodation space configured to accommodate shoes, together with the main body;
a blowing part coupled to the main body and configured to circulate air in the accommodation space;
at least one bracket coupled to the lower body and provided with a slider; and
at least one sliding rail that at least partially has a constant cross section along a front and rear direction and is coupled to the slider to be movable back and forth and coupled to a bottom surface of the base.

2. The shoe care device of claim 1, wherein a plurality of balls are interposed between the slider and the sliding rail to reduce friction.

3. The shoe care device of claim 1, wherein the slider

and the sliding rail are configured to be engaged with each other to prevent relative movement in a direction other than the front and rear direction.

4. The shoe care device of claim 1, wherein two brackets and two sliding rails are provided and symmetrically spaced apart on both left and right sides with respect to a center of the shoe care device.

5. The shoe care device of claim 4, wherein the brackets are located adjacent to a front end of the lower body, and
wherein the brackets and the sliding rails are shielded by the base when viewed from above.

6. The shoe care device of claim 5, wherein a length of the sliding rail in the front and rear direction is 0.9 times or more and 1 times or less the lower body in the front and rear direction.

7. The shoe care device of claim 4, wherein the lower body has a downwardly concave sliding groove on the upper side thereof to accommodate the brackets and the sliding rails.

8. The shoe care device of claim 7, wherein the sliding groove is divided into:

a first sliding groove extending rearward from a front end of the lower body; and
a second sliding groove extending rearward from a rear end of the first sliding groove,
wherein the brackets are accommodated in the first sliding groove and fixed to the lower body, and
wherein the sliding rails are accommodated in the first sliding groove and the second sliding groove and moves to protrude in front of the first sliding groove.

9. The shoe care device of claim 1, wherein the sliding rail comprises:

a first sliding rail coupled to the bracket to be movable back and forth; and
a second sliding rail coupled to the first sliding rail to be movable back and forth.

10. The shoe care device of one of claims 1 to 9, wherein the transparent window comprises a first window defining a front surface, a second window defining a left surface, and a third window defining a right surface, and
wherein the moving body defines an edge of the base and comprises a lower guard located outside the lower body on the front, left, and right sides.

11. The shoe care device of one of claims 1 to 9, wherein the moving body comprises a turntable coupled on the base to be rotatable about a vertical rotation axis.

12. The shoe care device of one of claims 1 to 9, wherein the transparent window comprises:

a first window defining a front surface;
a second window defining a left surface;
a third window defining a right surface;
a first fin portion integrally extending upward from a rear side of the second window; and
a second fin portion integrally extending upward from a rear side of the third window, and
wherein the upper body comprises:

a first insertion groove provided in the front and rear direction on a bottom surface of the upper body so that the first fin portion is inserted into and moved along the first insertion groove;
a first stopper provided in front of the first insertion groove to prevent forward movement of the first fin portion;
a second insertion groove provided in the front and rear direction on a bottom surface of the upper body such that the second fin portion is inserted into and moved along the second insertion groove; and
a second stopper provided in front of the second insertion groove to prevent forward movement of the second fin portion.

13. The shoe care device of claim 12, wherein the transparent window comprises:

a third fin portion integrally extending rearward from a rear end of the second window; and
a fourth fin portion integrally extending rearward from the rear end of the third window, and
wherein the middle body comprises:

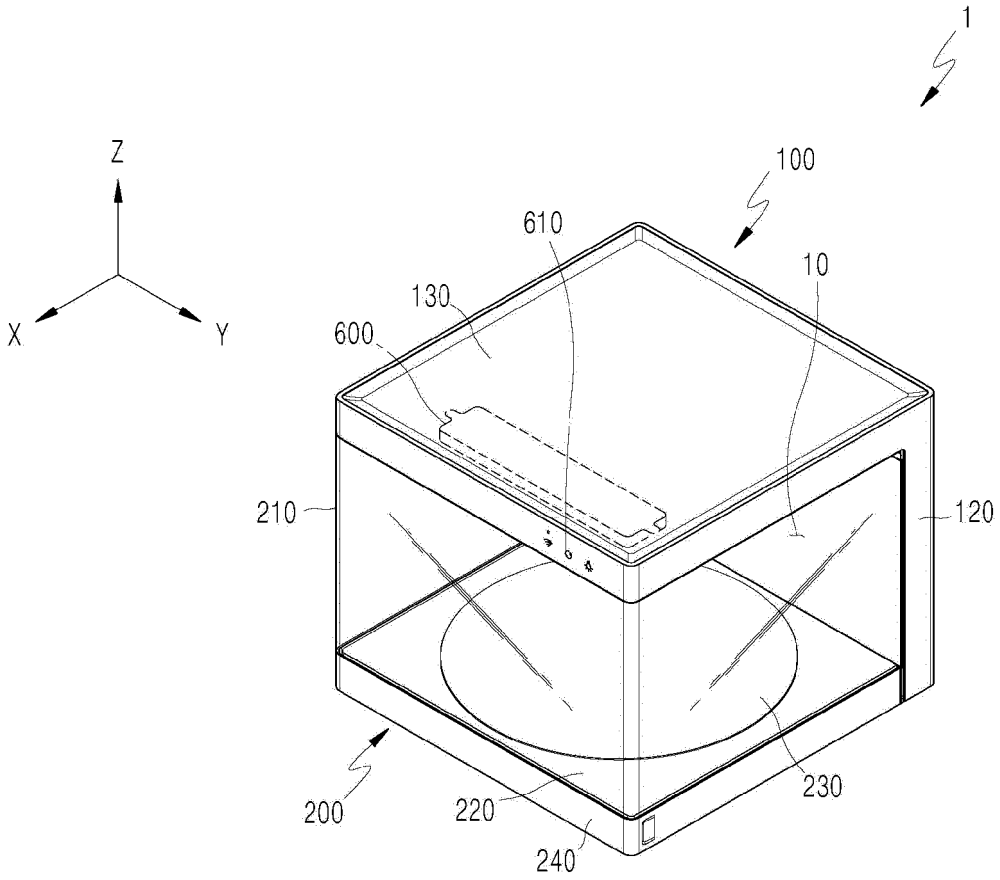
a third insertion groove provided in an up and down direction on a front surface of the middle body such that the third fin portion is inserted into the third insertion groove; and
a fourth insertion groove provided in the up and down direction on the front surface of the middle body so that the fourth fin portion is inserted into the fourth insertion groove.

14. The shoe care device of one of claims 1 to 9, wherein the main body comprises:

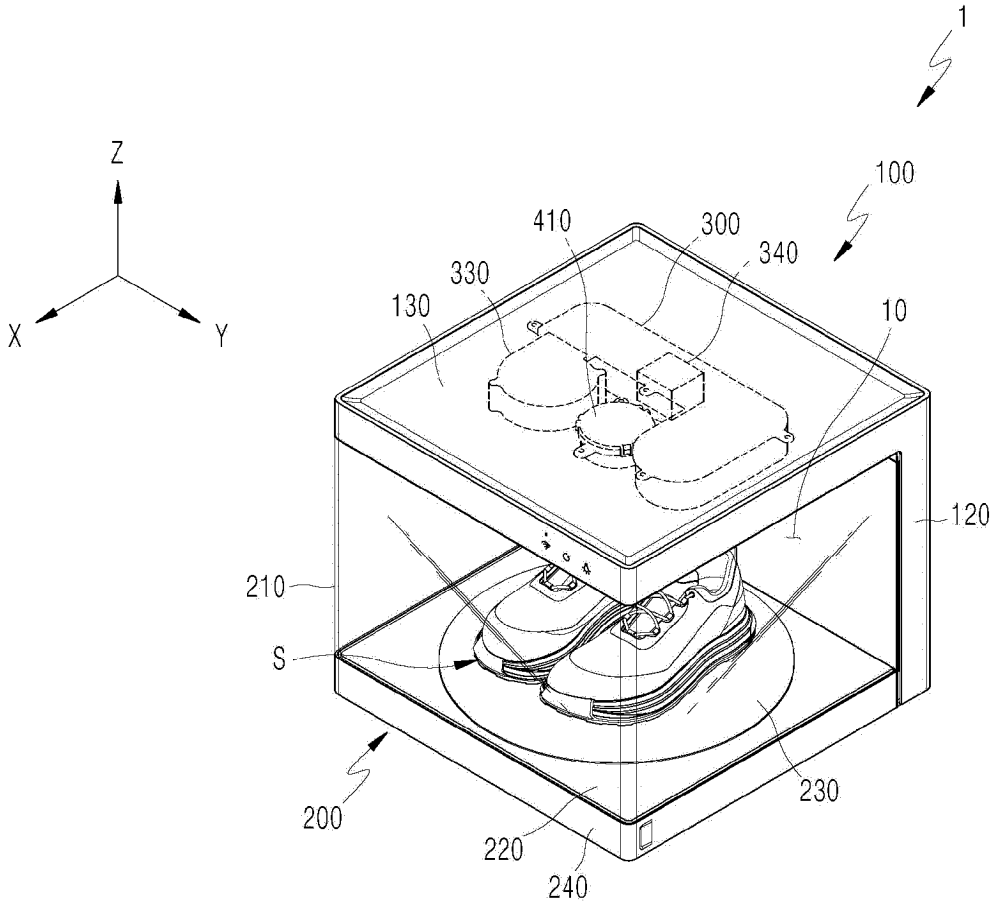
a light provided on a bottom surface of the upper body to illuminate the accommodation space;
a suction port provided on the bottom surface of the upper body;
a discharge port provided on the bottom surface

of the upper body;
an air path provided inside the upper body to interconnect the suction port and the discharge port so as not to interfere with the light, wherein the blowing part is disposed in the air path; and
a heating part disposed in the air path.

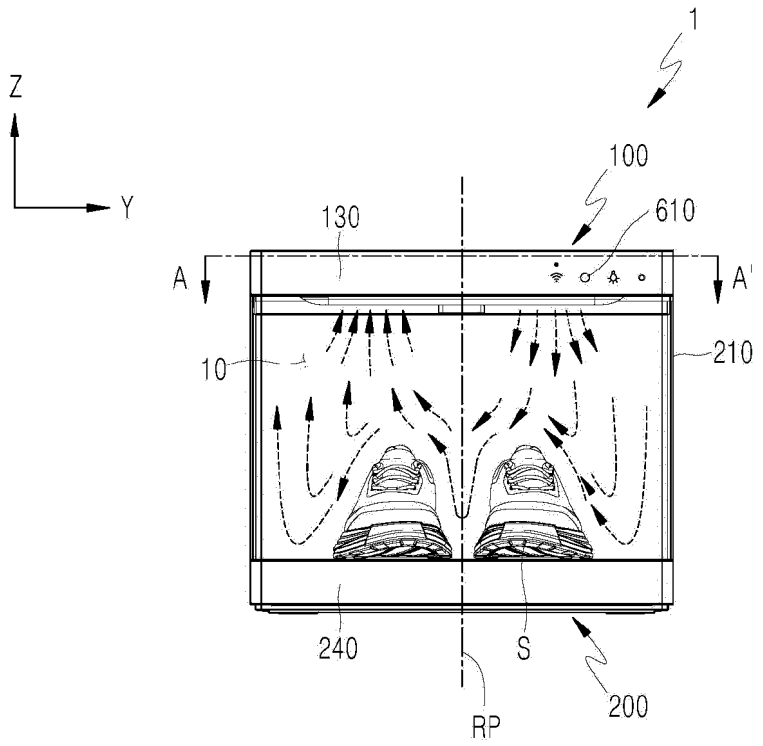
【Fig. 1a】



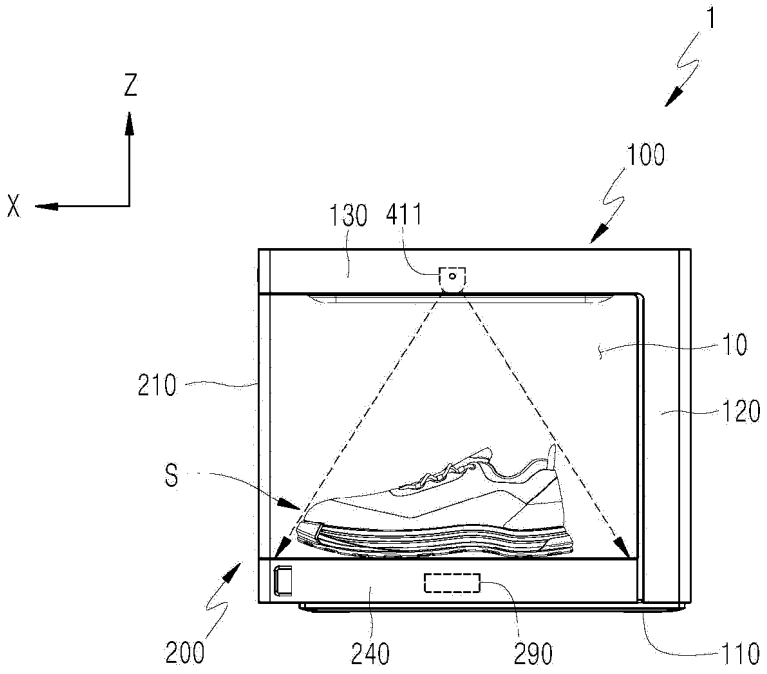
【Fig. 1b】



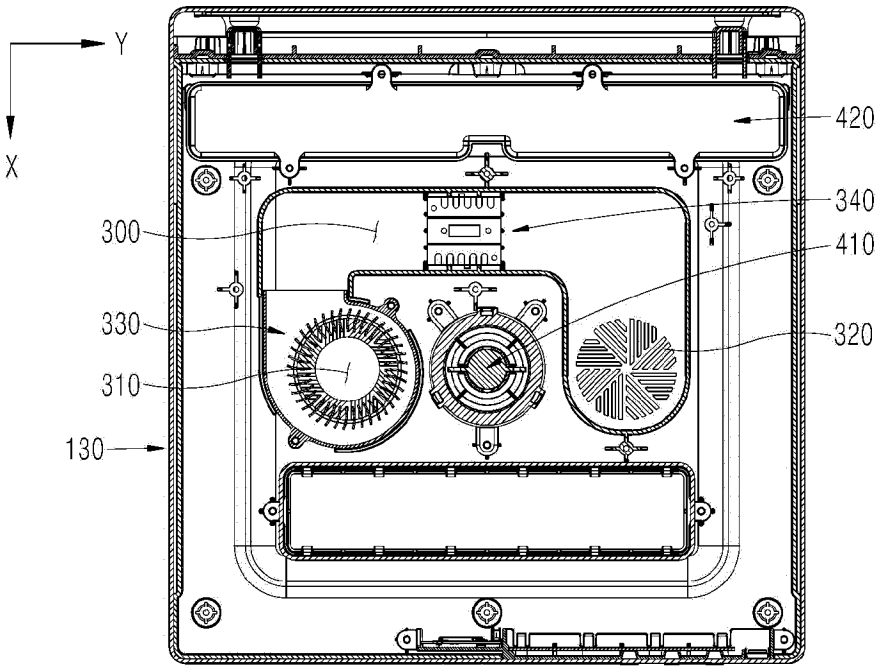
【Fig. 2a】


1
Z
Y
100
610
130
A
A'
10
210
240
S
200
RP

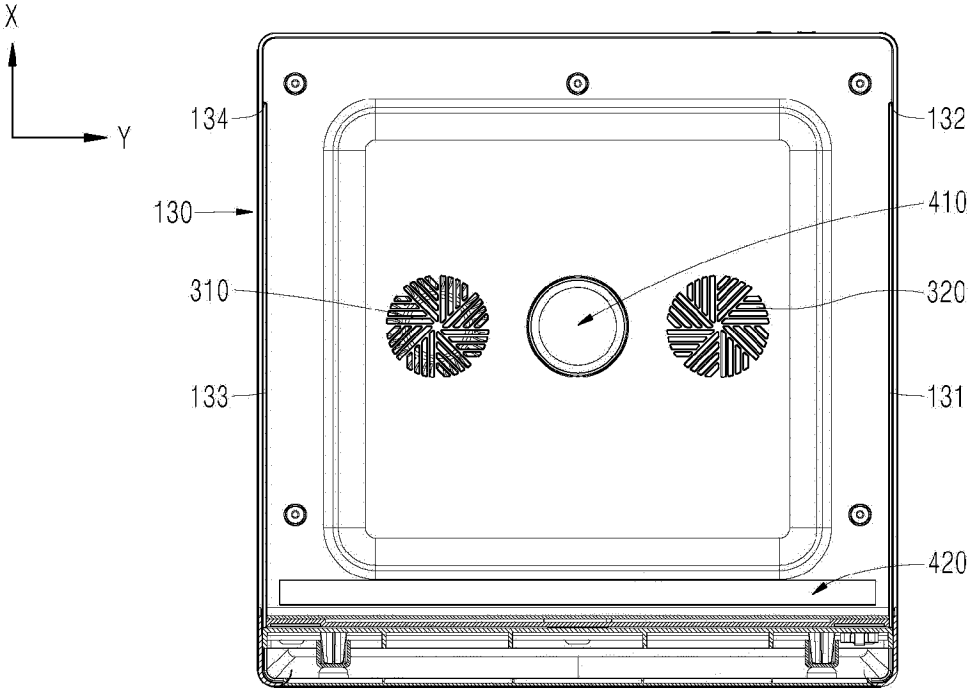
【Fig. 2b】


1
Z
X
100
130
411
10
210
120
S
200
240
290
110

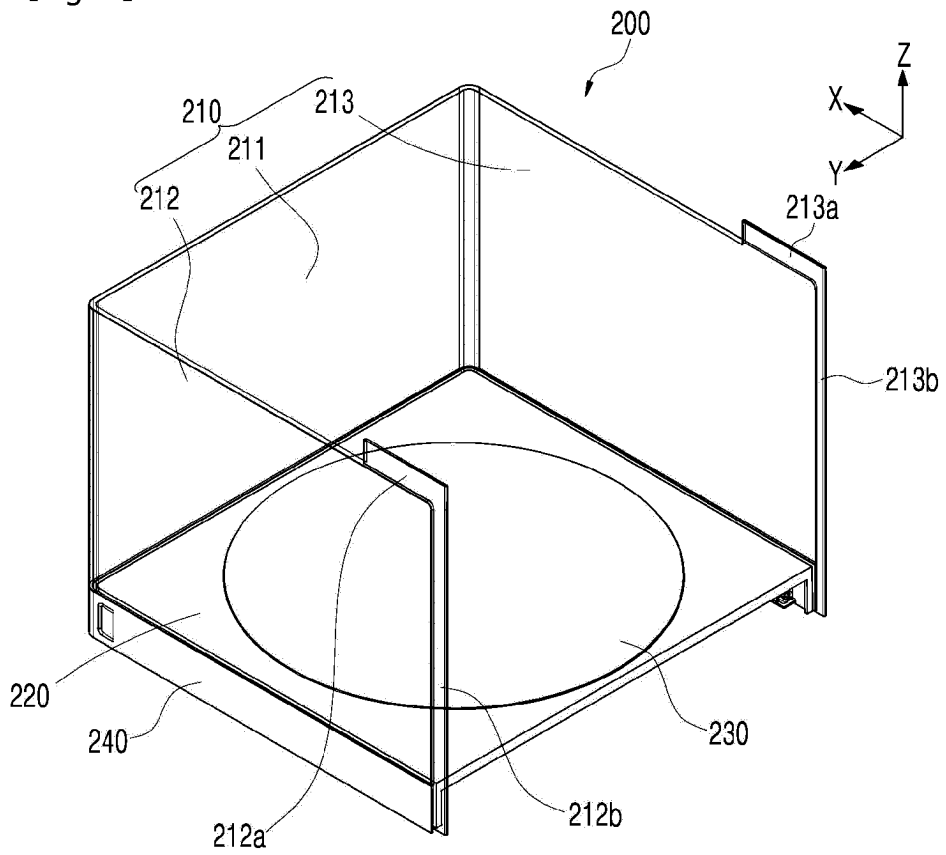
【Fig. 3a】


Y
X
420
340
300
410
330
320
310
130

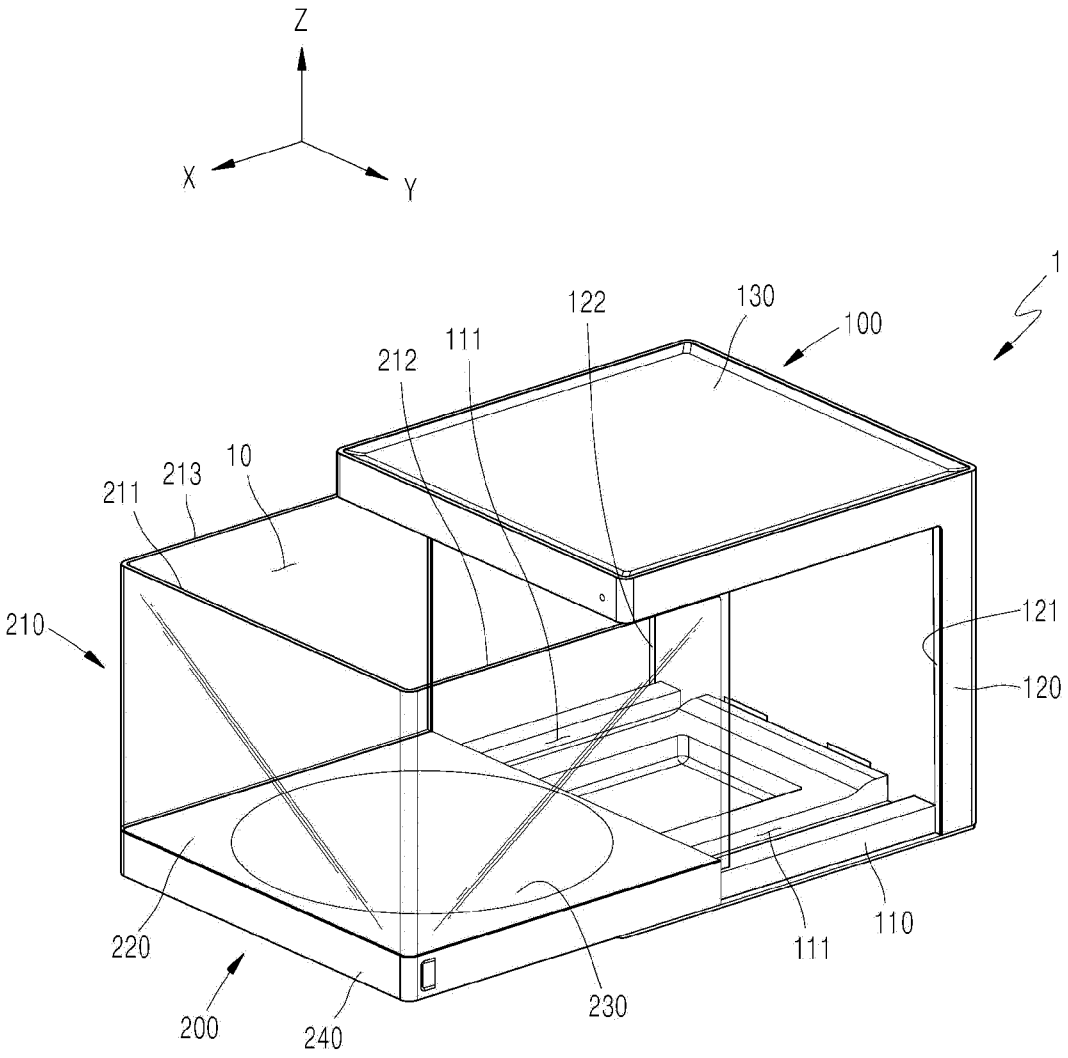
【Fig. 3b】


X
Y
134
132
130
410
310
320
133
131
420

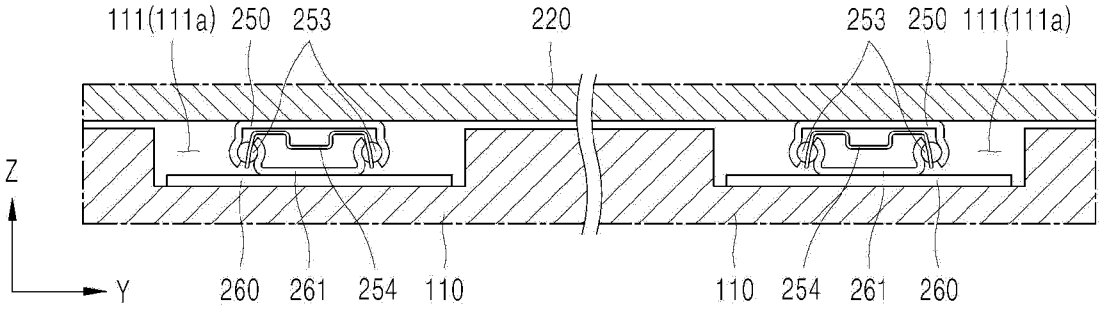
【Fig. 4】



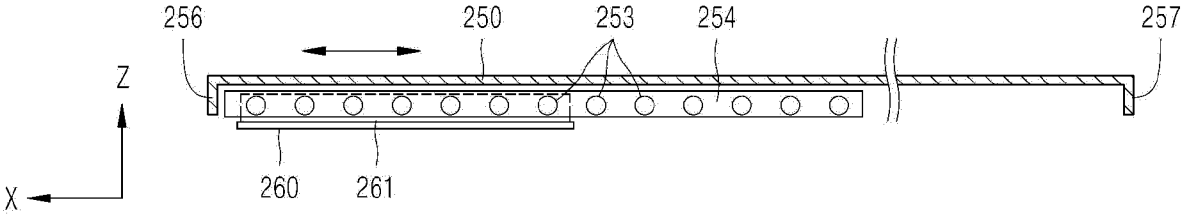
【Fig. 5】


Z
X
Y
1
100
130
122
111
212
213
10
211
210
121
120
220
200
240
230
111
110

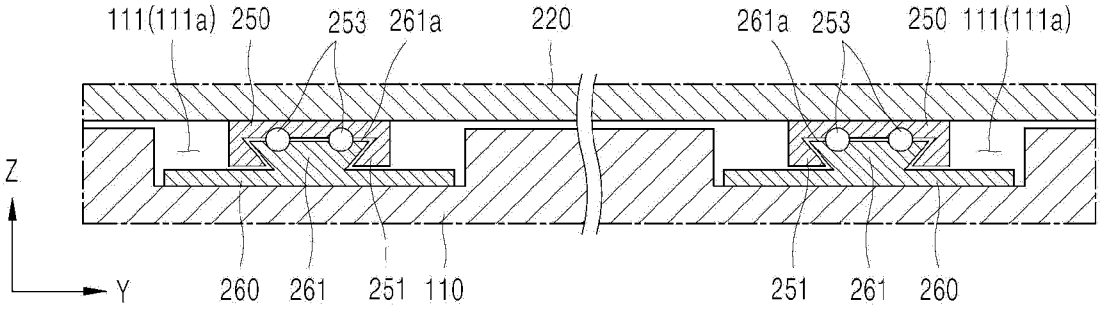
【Fig. 6a】



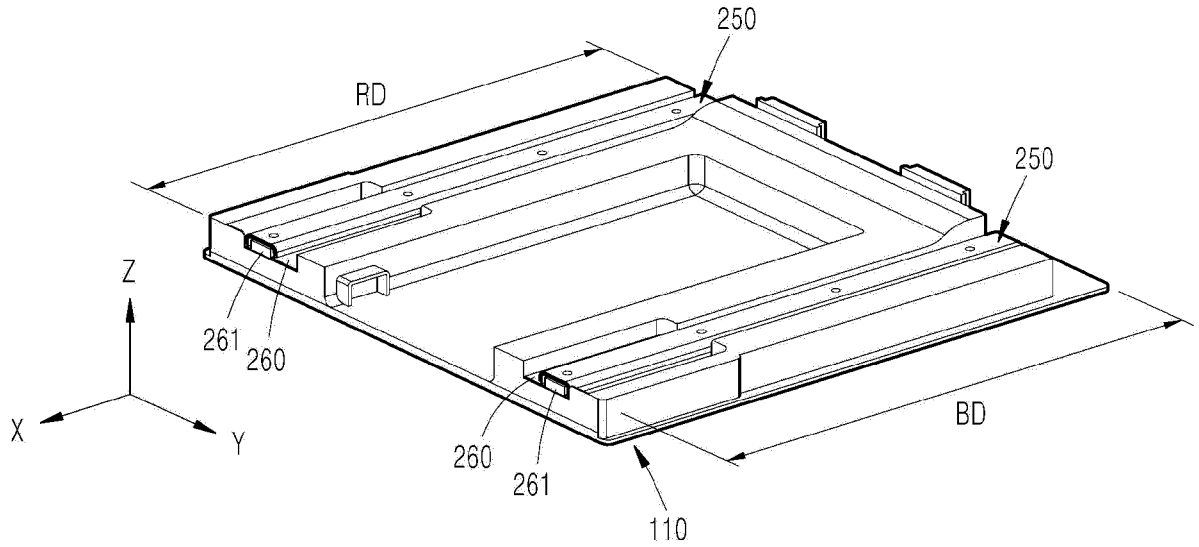
【Fig. 6b】



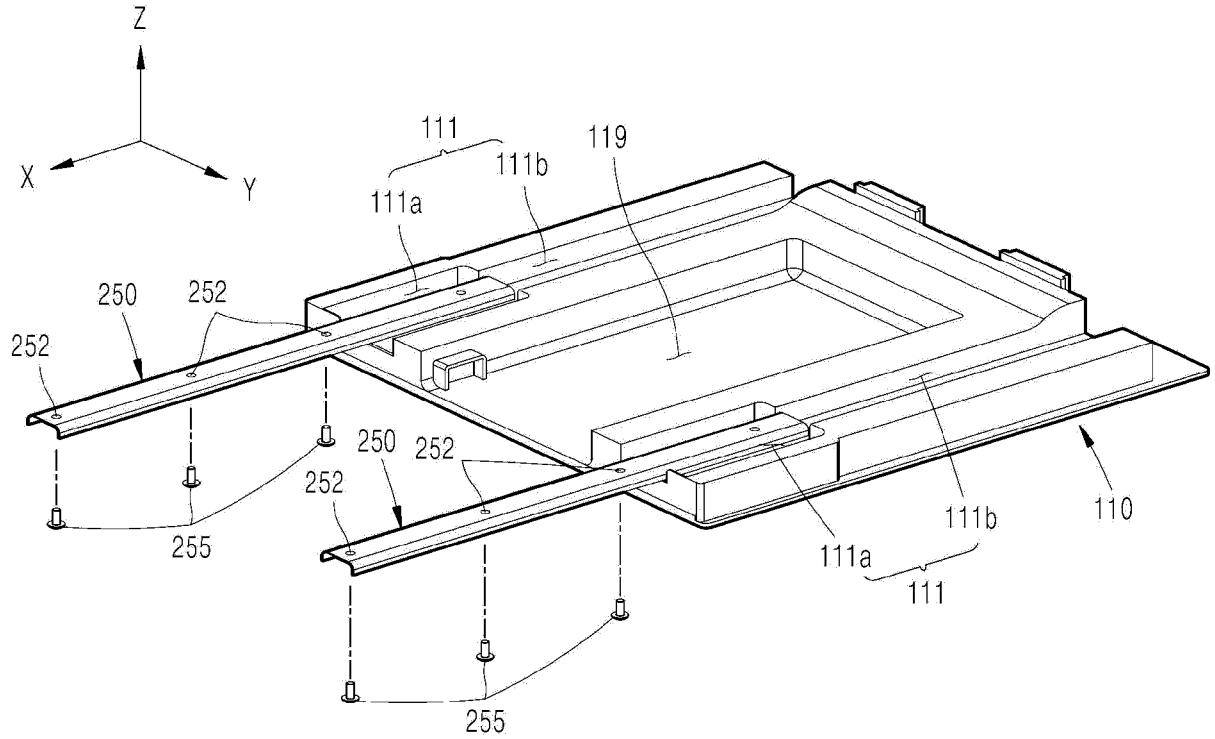
【Fig. 7】



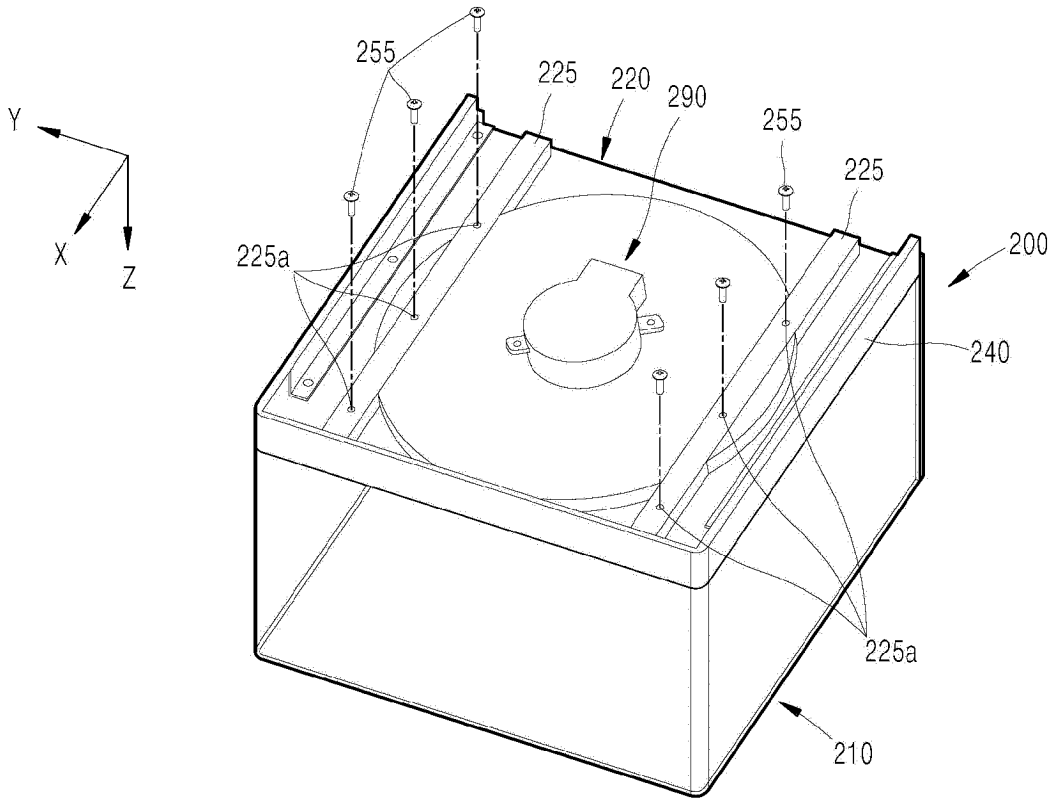
【Fig. 8a】


250
RD
250
Z
261
260
X
Y
260
261
BD
110

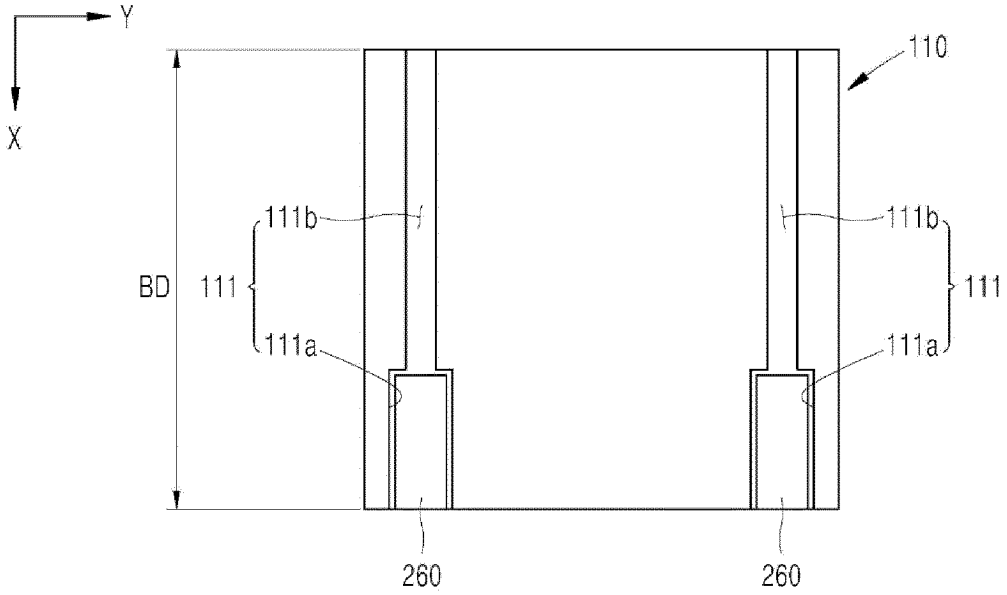
【Fig. 8b】


Z
X
Y
111
111b
119
111a
250
252
252
250
252
252
255
111b
110
111a
111
255

【Fig. 9】


Y
X
Z
255
225
220
290
255
225
200
225a
240
225a
210

【Fig. 10a】


Y
X
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111b
111b
BD
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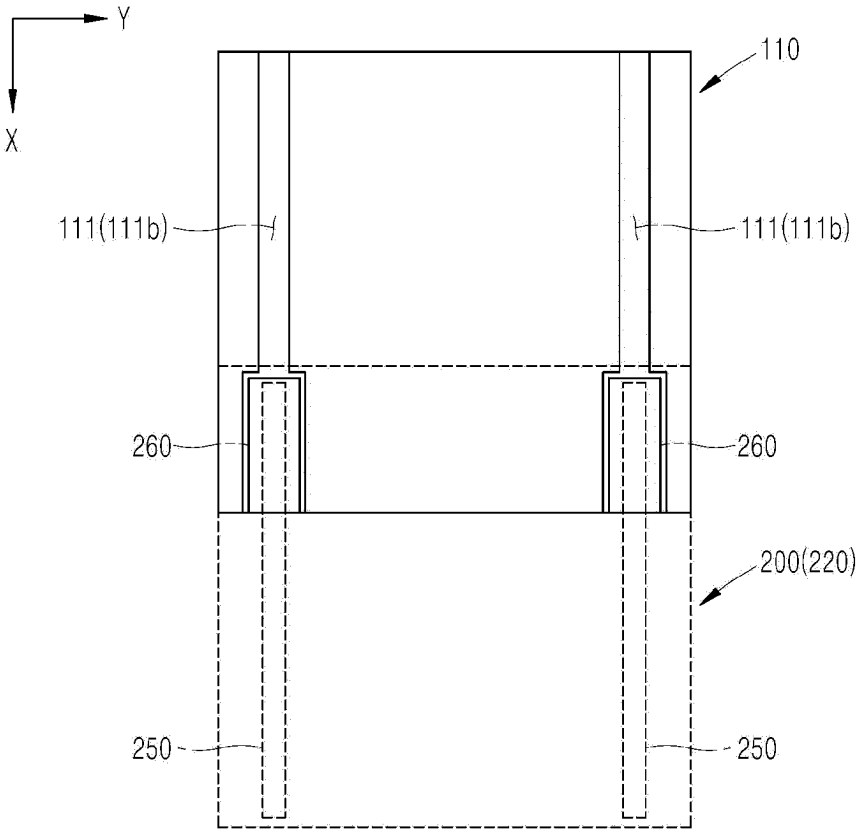
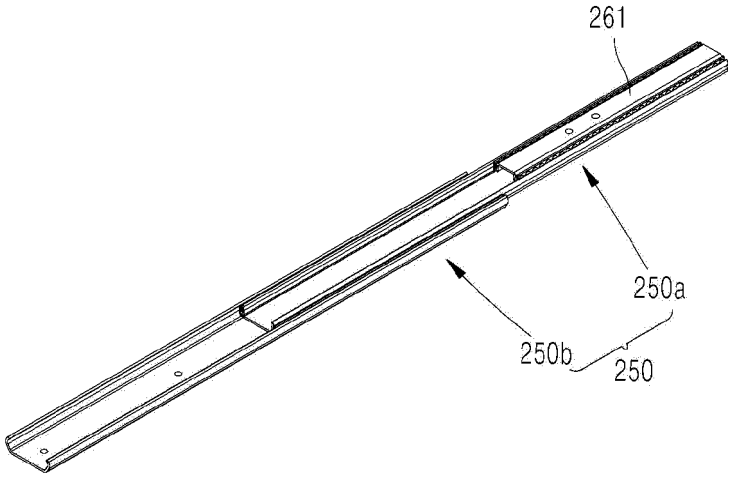
111
111a
111a
260
260

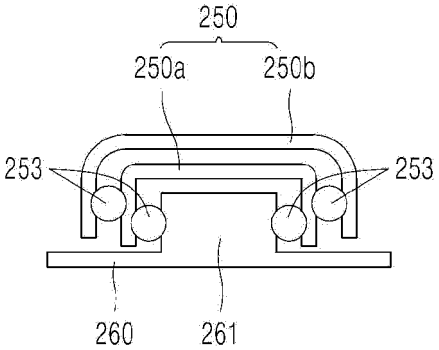
【Fig. 10b】



【Fig. 11】



【Fig. 12】



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2023/009539

A. CLASSIFICATION OF SUBJECT MATTER

A47F 3/00(2006.01)i; **A47F 7/08**(2006.01)i; **A47F 5/00**(2006.01)i; **A47F 5/025**(2006.01)i; **A47F 11/00**(2006.01)i; **A47F 3/11**(2006.01)i; **A47F 3/14**(2006.01)i; **A47L 23/20**(2006.01)i

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)

A47F 3/00(2006.01); A47F 11/00(2006.01); A47F 11/02(2006.01); A47F 11/10(2006.01); A47L 23/20(2006.01); A61L 2/10(2006.01); B60N 3/00(2006.01); B60N 3/06(2006.01); G09F 21/20(2006.01)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models: IPC as above
Japanese utility models and applications for utility models: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS (KIPO internal) & keywords: 신발 관리기(shoe care apparatus), 본체(main body), 이동체(movable body), 투명창(transparent window), 송풍부(blower), 브라켓(brackets), 슬라이딩레일(sliding rails)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 10-1091716 B1 (IN SEOUL CO., LTD.) 08 December 2011 (2011-12-08) See paragraphs [0001]-[0025]; and figures 1-3.	1-14
Y	KR 10-1260063 B1 (INSHOETECH CO., LTD.) 30 April 2013 (2013-04-30) See paragraphs [0019]-[0025]; and figures 1-6.	1-14
Y	WO 2013-048146 A2 (VINYL INC.) 04 April 2013 (2013-04-04) See abstract; claims 1-10; and figures 1 and 5-6.	11
Y	KR 10-2018-0072890 A (SUNGILINNOTEK CO., LTD.) 02 July 2018 (2018-07-02) See claims 1 and 6; and figure 1.	1,14
Y	KR 20-0438015 Y1 (WON, Min Sik) 11 January 2008 (2008-01-11) See paragraphs [0030]-[0032]; claims 1-6; and figures 2-3.	1

☐ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

* Special categories of cited documents:
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"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 September 2023	**27 September 2023**
Name and mailing address of the ISA/KR **Korean Intellectual Property Office** **Government Complex-Daejeon Building 4, 189 Cheongsa-ro, Seo-gu, Daejeon 35208** Facsimile No. **+82-42-481-8578**	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/KR2023/009539

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
KR 10-1091716 B1	08 December 2011	KR 10-2010-0104292 A	29 September 2010
KR 10-1260063 B1	30 April 2013	None	
WO 2013-048146 A2	04 April 2013	KR 10-2013-0034367 A	05 April 2013
		WO 2013-048146 A3	23 May 2013
KR 10-2018-0072890 A	02 July 2018	None	
KR 20-0438015 Y1	11 January 2008	None	

Form PCT/ISA/210 (patent family annex) (July 2022)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 20180127150 A **[0004]**
- KR 20130034367 **[0011]**
- KR 1020000009653 **[0015]**