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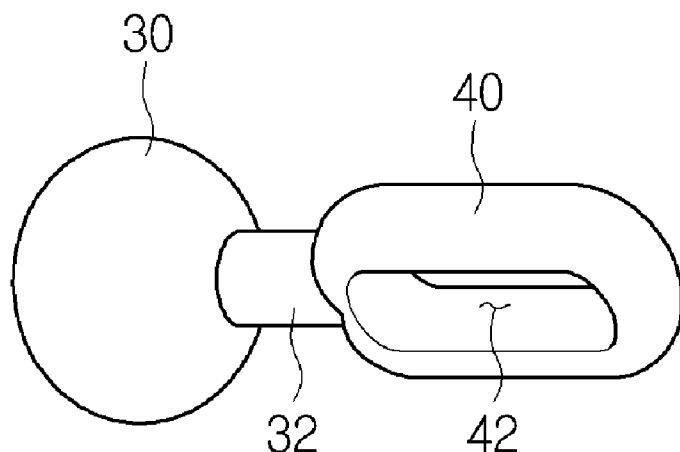
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(54) Title: ARTICULATED BRACKET FOR FENCE

[Fig. 3]



(57) Abstract: Disclosed is an articulated bracket for a fence. The articulated bracket which couples a pillar member and a horizontal member disposed between the pillar members, includes a first articulated part which is coupled with the pillar member and formed with an internal space communicated with an outside; and a second articulated part formed with a center portion disposed in the internal space of the first articulated part and a connection portion fastened to the horizontal member, wherein the connection portion is pivoted on the center portion.



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Description

Title of Invention: ARTICULATED BRACKET FOR FENCE

Technical Field

- [1] The present invention relates to a bracket structure which connects a pillar member and a horizontal member of a fence, and particularly to an articulated bracket for a fence, which has an articulated part for connecting the pillar member and the horizontal member of the fence so as to allow the pillar and horizontal members to be freely moved up/down and left/right.

Background Art

- [2] A fence is a structure for forming a boundary. The fence is provided at bridges, balustrades or trails for the security of pedestrians, or provided so as to control visitor access to a certain area. Further, the fence is also installed at stairs of a building in order to prevent falling accidents, or installed at a balcony or terrace for decoration. Generally, the fence is comprised of a plurality of pillar members installed in the ground, and a horizontal member which is transversely fixed to the pillar member. Herein, a bracket and a hinge are provided between the pillar member and the horizontal member so that an angle of the horizontal member can be changed along a hinge shaft.
- [3] Korean Patent No.941698 discloses a conventional fence with a hinge which can be rotated unidirectionally. In the above-mentioned Korean Patent, a pillar member installed in the ground is provided with a pair of supporting plates which are formed vertically, and each of the supporting plates is provided with a first bracket having a through-hole so that the through-holes are formed to be opposed to each other, and a hinge pin is fitted into the through-hole. A fitting tube is provided at an outer circumference of the hinge pin. The cylindrical fitting tube, which is formed of an elastic material and of which both ends are contacted with opposed inner side surfaces of the supporting plates, is disposed to enclose the outer circumference of the hinge pin. A second bracket, to which the pillar member is coupled, is formed with a hinge hole which is linearly contacted with the fitting tube so as to be rotatable. The horizontal member is coupled to the second bracket, thereby forming the fence.
- [4] In the above-mentioned prior art, however, since a connection portion between the horizontal member and the pillar member is exposed to the outside by the first and second brackets, it ruins the appearance. Further, since the rotation through the hinge is allowed only in one direction, it is not facile to install the fence and also it is constrained by place.
- [5]

Disclosure of Invention

Technical Problem

- [6] The present invention has been proposed to solve drawbacks of the above-mentioned prior art. It is an object of the present invention to provide an articulated bracket for a fence, which reduces the exposed connection portion of the horizontal member and the pillar member and also has an articulated part for connecting the pillar member and the horizontal member of the fence so as to allow the pillar and horizontal members to be freely moved up/down and left/right.

Solution to Problem

- [7] In order to accomplish the object, the present invention provides an articulated bracket for a fence, which couples a pillar member and a horizontal member disposed between the pillar members, including a first articulated part which is coupled with the pillar member and formed with an internal space communicated with an outside; and a second articulated part formed with a center portion disposed in the internal space of the first articulated part and a connection portion fastened to the horizontal member, wherein the connection portion is pivoted on the center portion.
- [8] Preferably, a communicating portion of the first articulated part, which communicates the internal space with the outside, is formed into a cross shape(+), and the connection portion is formed with a slot, and the horizontal member is fastened to the connection portion by a fastening member which is passed through the slot and the horizontal member.
- [9] Preferably, the first articulated part comprises a body which is coupled to the pillar member and a protruded portion which is integrally formed at a side of the body, and the center portion of the second articulated part is formed into a ball shape.

Advantageous Effects of Invention

- [10] According to the present invention, it is possible to provide an articulated bracket for a fence, which allows the pillar and horizontal members to be freely rotated up/down and left/right and also reduces the exposed connection portion of the horizontal member and the pillar member.
- [11] Further, according to the present invention, since the first articulated part is formed with a through-hole which is smaller than a center portion of the second articulated part, the connection portion and the horizontal member can be freely rotated up/down and left/right.
- [12] In addition, according to the present invention, since the bracket and the first articulated part are integrally formed with each other, it is possible to improve constructional efficiency of the fence and also to reduce the expenses involved in manufacturing a necessary material for coupling the bracket and the first articulated part.

Further, it is possible to firmly couple the bracket and the first articulated part.

Brief Description of Drawings

- [13] Fig. 1 is a perspective view of a conventional bracket structure.
- [14] Fig. 2 is a perspective view of a first articulated part according to the present invention.
- [15] Fig. 3 is a perspective view of a second articulated part according to the present invention.
- [16] Fig. 4 is a perspective view showing a state that the first and second articulated parts are coupled to each other according to the present invention.
- [17] Fig. 5 is a perspective view showing a state that a part of the construction of Fig. 4 is cut away.
- [18] Fig. 6 is a perspective view showing a state that a horizontal member is coupled to a connection portion of Fig. 3 using a bolt and a nut.
- [19] Fig. 7 is a perspective view showing a state that a pillar member is coupled with the horizontal member using a bracket according to the present invention.
- [20] Fig. 8 is a perspective view of a fence with an articulated bracket according to the present invention.

Best Mode for Carrying out the Invention

- [21] Hereinafter, the embodiments of the present invention will be described in detail with reference to accompanying drawings. The terms and words used in the description as described below are not limited to the typical or dictionary definition, and they can be interpreted as proper meanings and definitions consistent with the technical ideas.
- [22] An articulated bracket for a fence according to the present invention is comprised of a first articulated part and a second articulated part. The first articulated part includes a body 10 and a protruded portion 20, and the second articulated part includes a center portion 30 and a connection portion 40 (referring to Figs. 2 and 3).
- [23] In order to form a fence, it is necessary that a horizontal member 100 is coupled between a plurality of pillar members 200 (referring to Fig. 8). A bracket is used to couple the pillar member 200 and the horizontal member 100. The pillar member 200 is coupled to a surface of the body 10, and the protruded portion 20 is formed at an upper surface of the body 10, which is an opposite surface to the coupling surface between the pillar member 200 and body 10. The coupling of the body 10 and the protruded portion 20 may be carried out by welding, screwing or riveting, and the body 10 and the protruded portion 20 may be integrally formed with each other. As shown in Figs. 2 and 4, the protruded portion 20 is formed with an internal space 22, and the center portion 30 is disposed in the internal space 22. The center portion 30 is freely moved in the internal space 22. To this end, it is preferable that an inner surface of the

internal space 20 has a corresponding shape to an outer surface of the center portion 30, and it is more preferable that the center portion 30 is formed into a ball shape so as to freely rotate up/down and left/right. The center portion 30 is connected with an end of the connection portion 40. As shown in Fig. 3, the center portion 30 and the connection portion 40 may be connected through an extension portion 32. The center portion 30, the extension portion 32 and the connection portion 40 may be coupled to each other by welding, screwing or riveting, or may be integrally formed with each other. The connection portion 30 is coupled with the horizontal member 100 through a desired coupling method. Thus, a fence in which the pillar member 200 and the horizontal member 100 are coupled to each other is embodied. Because the connection portion 40 is connected to the center portion 30 which can be freely rotated, the connection portion 40 can be also pivoted freely on the center portion 30, and thus the horizontal can be arranged freely. In other words, the horizontal member may be horizontally connected with the pillar member, or inclinedly connected with the pillar member (so that the horizontal member is inclined at a desired angle with respect to the pillar member), as shown in Fig. 8. In addition, it is possible to minimize exposure of the bracket structure for connecting the pillar member and the horizontal member, thereby embodying a fence having good appearance.

[24] The protruded portion 20 is formed with a through-hole which communicates the internal space 22 with an outside. the center portion 30 disposed in the internal space 22 of the protruded portion 20 is connected through the extension portion 32 to the connection portion 40, and the through-hole may have various shapes. The extension portion 32 connected to the center portion 30 is exposed to the outside through the through-hole, and the connection portion 40 is connected to an exposed portion of the extension portion 32. Since the connection oprtion 32 is moved according to the pivot movement of the center portion 30, the through-hole should have a larger size than a pivot range thereof. That is, the thorough-hole has a larger diameter than a cross section of the extension portion 32 so as to secure an enough diameter for rotation of the extension potion 32 due to the rotation of the center portion 30.

[25] The thorough-hole may be formed into a cross shape (+). In case that the through-hole has the cross shape, the connection portion 30 can be freely pivoted according to the up/down and left/right movement of the center portion 30, and also the connection portion 30 funtions to guide the extension portion 32 and the connection portion 40 so that the extension portion 32 and the connection portion 40 are moved only in a desired direction.

[26] The connection portion 30 is formed with a slot 42. As shown in Fig. 6, the horizontal member 100 is disposed on the slot 42, and the horizontal member 100 is fixed to the connection portion 30 by a fastening member such as a bolt and a rivet. A

cross section of the fastening member such as the bolt and the rivet may be smaller than or equal to a size of the slot 42. Preferably, the cross section of the fastening member is equal to the size of the slot 42 so that the fastening member passed through the slot 42 firmly fixes the horizontal member.

- [27] Herein, in case that the fastening member is the bolt and nut, the bolt 50 is passed through the slot 42 and the horizontal member 100, and then the nut 52 is firmly fastened at an opposite side of a bolt head. Further, in case that the fastening member is the rivet, the rivet is passed through the slot 42 and the horizontal member 100, and then a head of the rivet is struck by a hammer so that the rivet is firmly fixed. The fastening member may be not the bolt and the rivet.

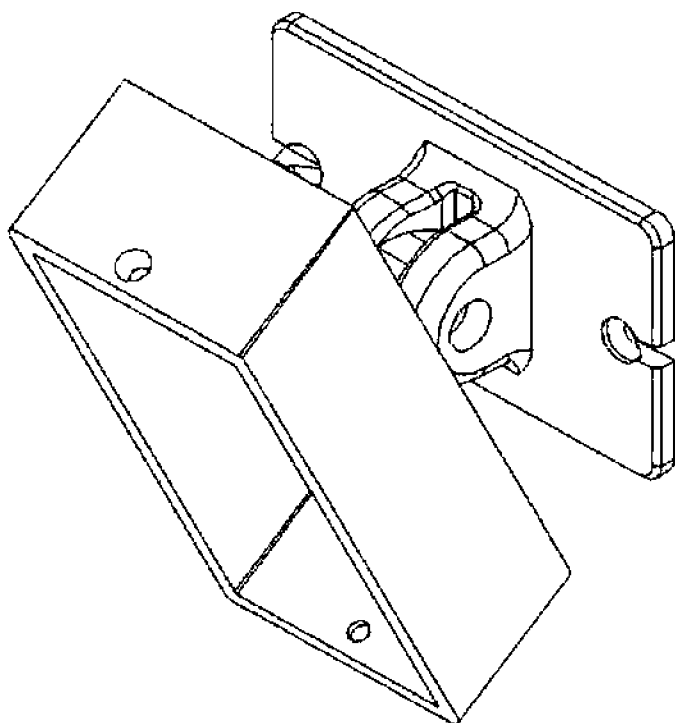
Industrial Applicability

- [28] The body 10 and the protruded portion 20 may be injection-molded integrally. In this case, since a separate process for coupling the body 10 and the protruded portion 20 is not needed, it is possible to increase work efficiency and also to reduce manufacturing cost.
- [29] The center portion 30 and the connection portion 40 may be injection-molded integrally. In this case, since a separate process for coupling the center portion 30 and the connection portion 40 is not needed, it is possible to increase work efficiency and also to reduce manufacturing cost.
- [30] While the present invention has been described with respect to the specific embodiments, it will be apparent to those skilled in the art that various changes and modifications may be made without departing from the spirit and scope of the invention as defined in the following claims.

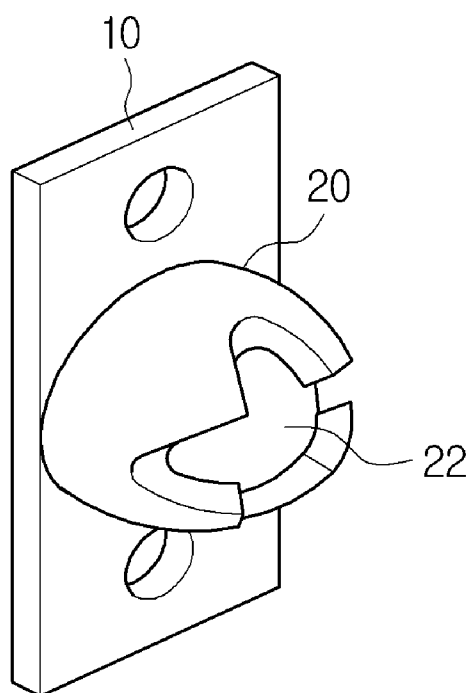
Claims

- [Claim 1] An articulated bracket for a fence, which couples a pillar member and a horizontal member disposed between the pillar members, comprising: a first articulated part which is coupled with the pillar member and formed with an internal space communicated with an outside; and a second articulated part formed with a center portion disposed in the internal space of the first articulated part and a connection portion fastened to the horizontal member, wherein the connection portion is pivoted on the center portion.
- [Claim 2] The articulated bracket according to claim 1, wherein a communicating portion of the first articulated part, which communicates the internal space with the outside, is formed into a cross shape(+).
- [Claim 3] The articulated bracket according to claim 1, wherein the connection portion is formed with a slot, and the horizontal member is fastened to the connection portion by a fastening member which is passed through the slot and the horizontal member.
- [Claim 4] The articulated bracket according to claim 3, wherein the fastening member is a bolt and a nut, and the bolt is fixedly passed through the slot and horizontal member so that the horizontal member is fastened to the connection portion.
- [Claim 5] The articulated bracket according to claim 1, wherein the first articulated part comprises a body which is coupled to the pillar member and a protruded portion which is integrally formed at a side of the body.
- [Claim 6] The articulated bracket according to claim 1, wherein the center portion of the second articulated part is formed into a ball shape.

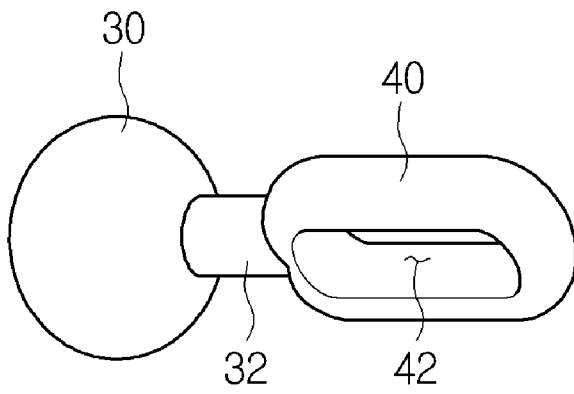
[Fig. 1]



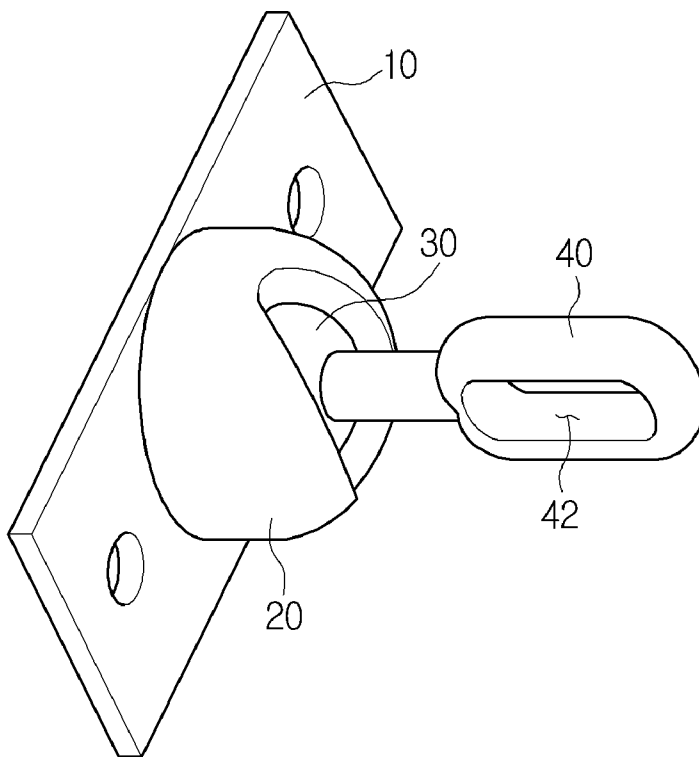
[Fig. 2]



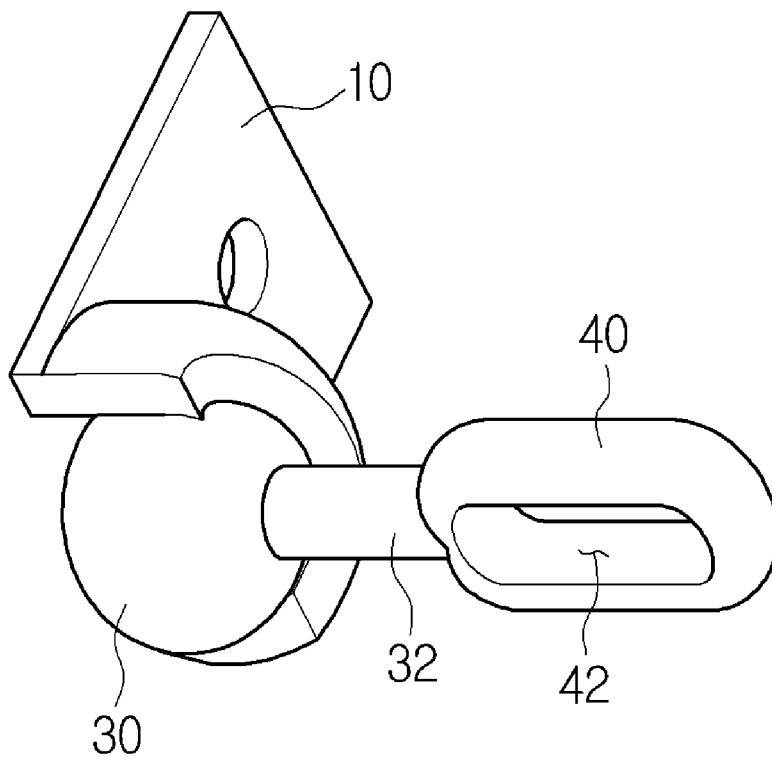
[Fig. 3]



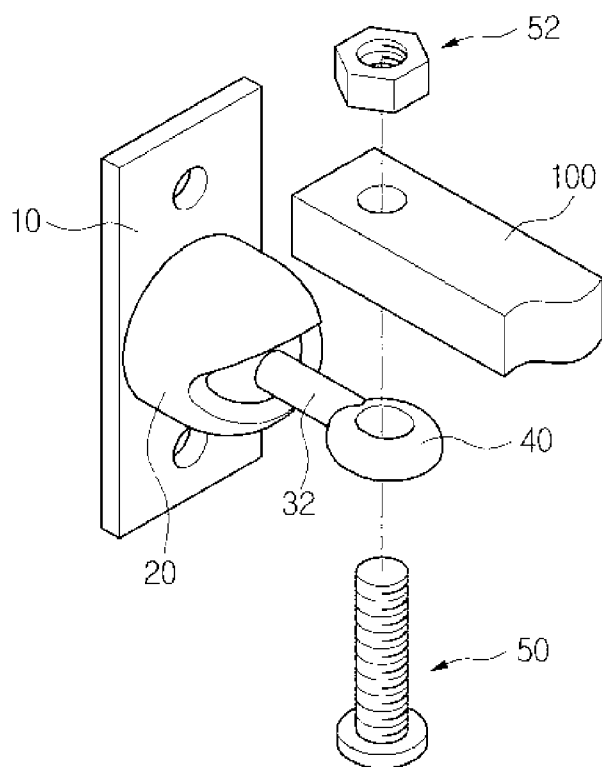
[Fig. 4]



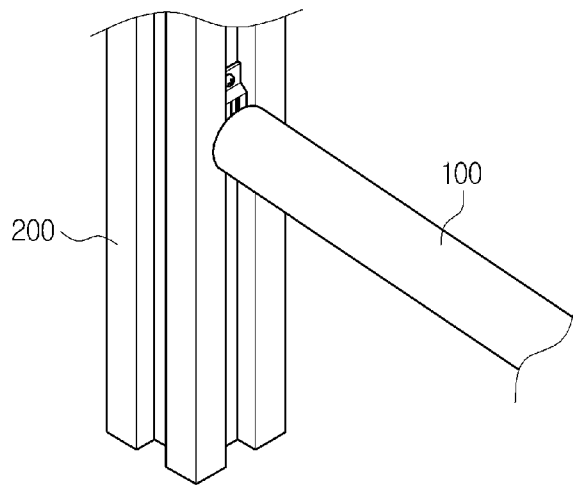
[Fig. 5]



[Fig. 6]



[Fig. 7]



[Fig. 8]

