A foldable joint of a sports goal, especially a foldable joint disposed on a rod body of a goal for soccer, handball, hockey, etc., to facilitate folding for storage and portable transportation; the foldable joint has at least an inner connecting rod, an outer toggle, two pivot bolts and adapters disposed at the distal ends of the rod body; wherein a slot way is disposed in the inner connecting rod for receiving the adapter of the rod body; two ends of the adapter are respectively disposed with the pivot bolts for connection; the outer toggle rotates about the outer periphery of the inner connecting rod to clamp and release thereby controlling the folding for storage and extendable positioning of the connected rod body.
FOLDABLE JOINT OF A SPORTS GOAL

BACKGROUND OF THE INVENTION

[0001] 1) Field of the Invention

The present invention relates to a foldable joint of a sports goal, more particularly to a foldable joint applied to a rod body of a sports goal; a retainable positioning and releasing structure is disposed through an internally and externally coaxial structure to make the fixedly connected rod body accomplish the folding and extending requirement.

[0002] 2) Description of the Prior Art

Accordingly, the ball sports requiring goal shooting for scoring includes soccer, handball, hockey, etc. Among them, soccer has become increasingly popular in the whole world. It is known that to become interested in sports needs to be cultivated from a young age and that achieves the best effect through game training. With a goal apparatus convenient for transportation, the game play won't be limited by the field site. It is believed that each parent expects to cultivate the kid's interest in sports through parent-child interaction.

[0003] A conventional goal structure is assembled by sequentially soldering rod bodies, telescoping tubes with small and larger diameters or retaining members. However, the entire structure is not foldable for storage but requires a sequential assembly and takes a considerable space without mentioning the trouble in transportation or carriage. Therefore, the ball sports requiring the conventional goal structure are usually limited by the field site.

[0004] In order to solve the abovementioned problems, the inventor of the present invention has designed a foldable joint to be applied to a rod body of a sports goal thereby providing a portable goal frame which folds for storage and convenient transportation.

SUMMARY OF THE INVENTION

[0005] The primary objective of the present invention of a foldable joint of a sports goal is to provide a foldable joint structure to be applied to a rod body of a goal thereby making the transportation of the goal apparatus more convenient and freeing the user from the limit of a field site.

[0006] The present invention of a foldable joint comprises an inner connecting rod, an outer toggle, two pivot bolts and adapters disposed at the distal ends of the rod body; wherein a slot way is disposed in the inner connecting rod for receiving and connecting with the adapter of the rod body through the pivot bolt; the outer toggle rotates about the external periphery of the inner connecting rod to clamp and release thereby controlling the folding for storage and extendable positioning of the connected rod body.

[0007] To enable a further understanding of the structural features and the technical contents of the present invention, the brief description of the drawings below is followed by the detailed description of the preferred embodiment.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is a pictorial drawing of a foldable joint of the present invention.

[0011] FIG. 2 is an exploded drawing of a foldable joint of the present invention.

[0012] FIG. 3 is a schematic drawing of a retaining movement of the foldable joint of the present invention.

[0013] FIG. 4A is and schematic drawing of a cross-section A-A of the foldable joint of the present invention.

[0014] FIG. 4B is a schematic drawing of another movement of the cross-section A-A of the foldable joint of the present invention.

[0015] FIG. 5 is a schematic drawing of a folding movement of the foldable joint of the present invention.

[0016] FIG. 6 is a schematic drawing of the foldable joint of the present invention applied to a goal rod body.

[0017] FIG. 7 is a schematic drawing of the foldable joint of the present invention applied to another goal rod body.

[0018] FIG. 8A is the first schematic drawing of the movement of implementing the foldable joint of the present invention to another goal rod body.

[0019] FIG. 8B is the second schematic drawing of the movement of implementing the foldable joint of the present invention to another goal rod body.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0020] Referring to FIGS. 1 and 2, the present invention of a foldable joint (11) comprises an inner connecting rod (11), an outer toggle (12) and two pivot bolts (132, 132) and two adapters (13, 13) disposed at the distal ends of a rod body (2), wherein a slot way (112) is disposed in the interior portion of the inner connecting rod (11) and has an inner stopper (115) formed in the middle; the two sides of the inner stopper (115) and the two ends of the slot way (112) receive the adapters (13, 13) to connect with the rod body (2); through holes (131, 131) are disposed respectively in the adapters (13, 13) for the insertion of the pivot bolts (132, 132) and the fastening in the bolt slot (113) to complete the connection; four convex portions (111, 111', 114, 114') are disposed in the corresponding areas at the front and rear ends on the outer ring surface of the inner connecting rod (11) and correspondingly inserted into four retaining slots (121, 121', 12, 12') on the inner side of the inserted outer toggle (12). The outer toggle (12) is a hollow sleeve with a hollow slot (123) formed at the center thereof for receiving the inner connecting rod (11); wherein the central position of the hollow slot (123) is disposed with an outer stopper (124) corresponding to the inner stopper (115) of the inner connecting rod (11). However, when the outer toggle (12) rotates around the external periphery of the inner connecting rod (11), the convex portions (111, 111', 114, 114') retain with and position at the retaining slots (121, 121', 12, 12') correspondingly thereby controlling the folding for storage and extendable positioning of the rod body (2) connected in the slot way (112).

[0021] As indicated in FIGS. 3, 4A and 4B, the present invention of a foldable joint (1) uses the 180 degree rotation of the outer toggle (12) to turn the outer stopper (124) to another corresponding area; at this time, the retaining slots (121, 121) previously corresponding to the convex portion (114, 114') rotate to the other corresponding convex portions.
(111, 111'); as the same, the convex portions (114, 114') correspond to the retaining slots (122, 122') such that the rod body (2) is unable to be folded due to the rotation of the outer toggle (12) thereby limiting the extension of the rod body (2).

[0022] Reversely, as indicated in FIG. 5, when it is necessary to fold the rod body (2), the outer toggle (12) is rotated to turn 180 degree again to make the inner stopper (115) and the outer stopper (124) correspond thereby folding and rotating the adapters (13, 13') of the rod body (2) at 90 degree to fold the extended rod body (2) for storage.

[0023] Therefore, in summation of the abovementioned, when applying the foldable joint (1) to a goal rod body (2), different goal structures can be designed through the connection relation of the rod body (2); for example, the implementation of the present invention as indicated in FIGS. 6, 7, 8A and 8B is disposed substantially with a foldable joint (1) in the jointing or folding areas according to the connections between the rod bodies (2); the retaining and the release of the foldable joint (1) control the folding for storage and extendable positioning of the connected rod body (2) to further provide a structural design of a foldable joint (1) to be applied onto the goal rod body (2) for having the function of folding for storage and extendable positioning thereby making the portable transportation of the goal apparatus more convenient and allowing the user not to be limited by the field site.

[0024] It is of course to be understood that the embodiment described herein is merely illustrative of the principles of the invention and that a wide variety of modifications thereto may be effected by persons skilled in the art without departing from the spirit and scope of the invention as set forth in the following claims.

1. A foldable joint of a sports goal mainly applied to a goal rod body, wherein the foldable joint comprising an inner connecting rod, an outer toggle, two pivot bolts and adapters disposed at distal ends of the rod body is characterized that:

   the inner connecting rod has a communicated slot way disposed therein and an inner stopper formed in the middle thereof; the two sides of the inner stopper and the two ends of the slot way receive the adapters to connect with the rod body; four convex portions are disposed in the corresponding areas at the front and rear ends on the outer ring surface of the inner connecting rod and correspondingly inserted into four retaining slots on the inner side of the inserted outer toggle;

   the outer toggle is a hollow sleeve with a hollow slot formed at the center for receiving the inner connecting rod; wherein the central position of the hollow slot is disposed with an outer stopper corresponding to the inner stopper of the inner connecting rod;

   the adapters has through holes disposed at the central positions thereof for the insertion of the pivot bolts and fastening in the slot way of the inner connecting rod;

   when the outer toggle rotates around the external periphery of the inner connecting rod, the convex portions of the rod body retain with and position at the retaining slots of the outer toggle correspondingly; the retaining slot previously corresponding to the convex porton rotates to the other corresponding convex portion; as this time, the rotation of the outer toggle makes the outer stopper push against the adapters and the rod body unable to be folded thereby limiting the extension; the inner and outer stoppers control the folding for storage and extendable positioning of the rod body connected in the slot way.

2. The foldable joint of a sports goal according to claim 1, wherein the shapes of the inner stopper of the inner connecting rod and the outer stopper of the outer toggle are the same.

3. The foldable joint of a sports goal according to claim 1, wherein the positions of the inner stopper of the inner connecting rod and the outer stopper of the outer toggle correspond to each other.

4. The foldable joint of a sports goal according to claim 1, wherein the corresponding between the convex portion on the external surface and the retaining slot on the outer toggle makes the outer toggle rotate at 180 degree.

5. The foldable joint of a sports goal according to claim 1, wherein the shape of the adapter end portion has to be of a circular and spherical shape for enabling the connected rod body to rotate.

6. The foldable joint of a sports goal according to claim 1, wherein the rod body connected at the adapter has to use the pivot bolt fixedly disposed at the adapter as an axle center to rotate.

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