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(54) **Playing and training appliance**

Spiel und Trainingsgerät

Dispositif de jeu et d'entraînement

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**US-B1- 6 382 356**

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**Description**Field of the Invention

**[0001]** The present invention relates a playing and training appliance. The appliance is in the first place intended for use in playgrounds or similar environments, but can also advantageously be used as a training appliance.

Background Art

**[0002]** US 950,100 shows a prior art exercising apparatus. US 6,382,356 shows a man lift apparatus and US 5,554,074 shows a playground deck assembly.

**[0003]** The appliance according to the present invention relates to a new shape of acrobatic rings. A ring according to the invention has the form of an open spiral with parallel ends that are fastened in a manner that provides an interesting pivoting and resilient motion when a user hangs from the ring or sits in it. Generally, a spiral is defined as a plane curve which an infinite number of times goes around a fixed point and then either moves from the point or towards it. A spiral according to the invention is consequently representing slightly more than one turn of a spiral by definition. The main function of the invention is that the user should hang by the knees or sit in the ring, or hold the ring with his hands and swing to and fro.

Summary of the Invention

**[0004]** The object of the present invention is to provide a different and new approach to a playing and training appliance which makes a new and exciting form of acrobatics possible.

**[0005]** According to the invention, this object is achieved by a playing and training appliance which comprises at least one open spiral or the like, in a plane with two separate parallel ends and an intermediate gripping part. The ends are turnably fastened to a fixed base.

Brief Description of the Drawings

**[0006]** The invention will now be described in detail by means of a number of embodiments and with reference to the accompanying drawings in which

Fig. 1a illustrates the appliance according to the invention in a first embodiment where the appliance is essentially circular,

Fig. 1b shows the appliance according to the invention in a second embodiment where the appliance is non-circular,

Fig. 2 shows fastening of the appliance according to Figs 1a and 1b,

Fig. 3 shows the appliance according to the invention arranged according to a second embodiment,

Fig. 4 is a cross-section of the fastening in Fig. 2, and Fig. 5 shows two appliances according to the invention mounted on a stand.

5 Description of Preferred Embodiments

**[0007]** The playing and training appliance according to the invention comprises at least one open spiral which is designated 2 in the drawings. According to the invention, the term "spiral" relates to a device of a shape which may be described as an open loop which has two independent ends that are not intended to meet, see Figs 1a and 1b. The spiral 2 is arranged in a plane with two separate parallel ends 4 and an intermediate gripping part 6. The spiral 2 according to the invention is intended for a user to hang from, either with his hands grasping the spiral or by the knees, or by sitting in the spiral.

**[0008]** The centre of the spiral 2 is offset by the ends 4 of the spiral 2 being offset in the plane of the spiral 2 separate from each other or overlapping each other. In another embodiment, the ends 4 of the spiral 2 are offset perpendicular to the plane of the spiral 2, see Fig. 3, either separate from each other or overlapping each other.

**[0009]** The spiral is made of a resilient material and advantageously consists of a steel tube, but it can also be made of a massive rod, carbon fibre reinforced plastic, some other type of plastic material or the like.

**[0010]** In a first embodiment, the spiral 2 is essentially circular, see Fig. 1a, and is formed so that the longitudinal axes of the ends 4 are parallel. The essentially circular spiral 2 has a size of about 500-1000 mm, preferably about 700 mm, but may of course be made larger and smaller and with a different geometrical, symmetrical or unsymmetrical shape according to wishes and needs. Fig. 1b shows an example of a non-circular spiral 2.

**[0011]** The parallel ends 4 of the spiral 2 are arranged movably in a common holder 8. Fastening devices 10 are arranged in the holder 8 in the form of bearing sleeves which are essentially fixedly arranged. The fastening devices 10 can also consist of other types of elements. The bearing sleeves are provided with bearings 12. The fastening devices 10 in the form of bearing sleeves are used for fastening to the fixed base which consists of the holder 8. The ends 4 of the spiral 2 are inserted into the fastening devices 10. The bearings 12 can be, for example, slide bearings, roller bearings, ball bearings or rubber bearings. The ends 4 are turnably fastened to the fastening devices 10.

**[0012]** A fastening entirely of rubber where the fastening device 10 and the bearings 12 are made of rubber can be used in the present invention, but such fastening manages swinging of a device according to the invention by  $\pm 30^\circ$  maximum and will after that break. It is therefore advantageous to use fastening devices 10 in the form of bearing sleeves of steel with bearings 12 inside, such as slide bearings, roller bearings or ball bearings.

**[0013]** The fastening in the holder 8 is completely rigid

in such a manner that the sleeves have a fixed position, which forces the material of the spiral 2 to twist in the fastening devices 10. Thus, it is the actual dead weight of the material of which the spiral is made that causes the swinging. The ends 4 of the spiral 2 are arranged to be fastened to the holder 8, in which holder 8 also a transverse bar 14 is fixedly arranged and which is fastened to some kind of stand or the like according to prior-art technique and standards, see Fig. 5. The holder 8 is enclosed by a casing 16 to prevent dirt and the like from entering and affecting the fastening of the spiral 2, and also for aesthetical reasons.

**[0014]** The construction of the spiral 2 improves the function by the two ends 4 of the spiral 2 meeting each other at a parallel distance. Within geometry two separated lines is considered to be parallel if they don't have any common points. Both ends are inserted into the fastening devices 10 which are provided with bearings 12 so that the spiral 2 can swing to and fro. In the actual swinging motion, tension arises in the spiral 2 and gives it the same properties as if it were spring tensioned. Owing to the fastening of the construction, the swinging resistance will be greater the greater the swinging at an angle to which the spiral 2 is subjected. Of course, this phenomenon continues until the change in angle passes about  $\pm 90^\circ$ .

**[0015]** The resilience of the spiral 2 obtains a minimum tension in the position of rest, the vertical position, and return tension when swinging perpendicular to the plane of the spiral 2. Forces due to tension that arise in the deviation of the spiral 2 from the vertical position strive to return the spiral 2 to the vertical position.

**[0016]** The present invention has now been described by means of a number of embodiments, and it should be understood that various modifications and supplements can be made within the scope of the invention as defined in the appended claims.

#### Reference Numerals

Spiral	2
End	4
Gripping part	6
Holder	8
Fastening device	10
Bearing	12
Transverse rod	14
Casing	16

#### Claims

1. A playing and training appliance, **characterised in that** it comprises at least one open spiral (2), with two separate parallel ends (4) and an intermediate gripping part (6), said ends (4) being turnably fas-

tened to a common holder (8) forming a fixed base, and that the ends (4) of the spiral (2) are offset in the plane of the spiral (2) or offset perpendicular to the plane of the spiral.

2. A playing and training appliance as claimed in claim 1, **characterised in that** fastening devices (10) provided with bearings (12) are used for fastening to the common holder (8) forming the fixed base.

#### Patentansprüche

1. Sport- und Trainingsgerät, **dadurch gekennzeichnet, dass** es wenigstens eine offene Spirale (2) mit zwei separaten parallelen Enden (4) und einem dazwischenliegenden Greifteil (6) umfasst, wobei die Enden (4) drehbar an einem gemeinsamen Halter (8), der eine feststehende Basis bildet, befestigt sind, und dadurch, dass die Enden (4) der Spirale (2) in der Ebene der Spirale (2) versetzt sind oder senkrecht zu der Ebene der Spirale versetzt sind.
2. Sport und Trainingsgerät nach Anspruch 1, **dadurch gekennzeichnet, dass** mit Lagern (12) versehene Befestigungseinrichtungen (10) für die Befestigung an dem gemeinsamen Halter (8), der die feststehende Basis bildet, verwendet werden.

#### Revendications

1. Dispositif de jeu et d'entraînement, **caractérisé en ce qu'il** comprend au moins une spirale ouverte (2) avec deux extrémités parallèles séparées (4) et une partie de préhension intermédiaire (6), lesdites extrémités (4) étant fixées de manière tournante à un support commun (8) formant une base fixe, et **en ce que** les extrémités (4) de la spirale (2) sont décalées dans le plan de la spirale (2) ou décalées de manière perpendiculaire au plan de la spirale.
2. Dispositif de jeu et d'entraînement selon la revendication 1, **caractérisé en ce que** les moyens de fixation (10) fournis avec des paliers (12) sont utilisés pour la fixation au support commun (8) formant la base fixe.

FIG. 1a

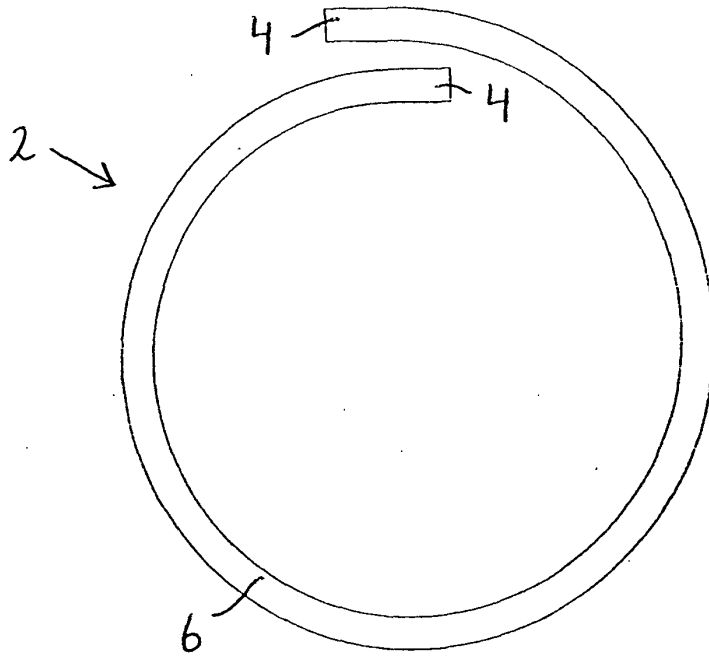


FIG. 1b

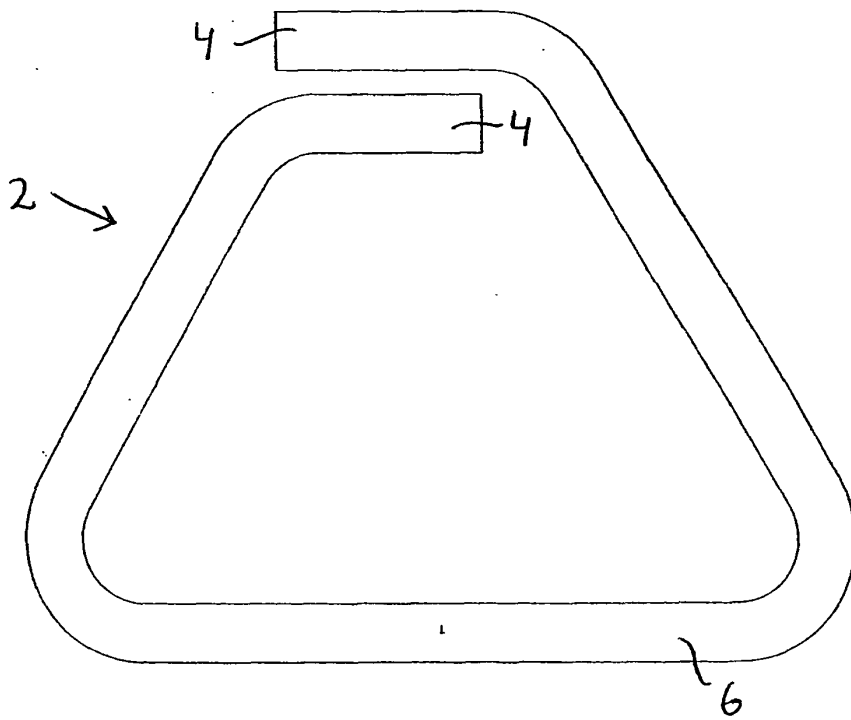


FIG. 2

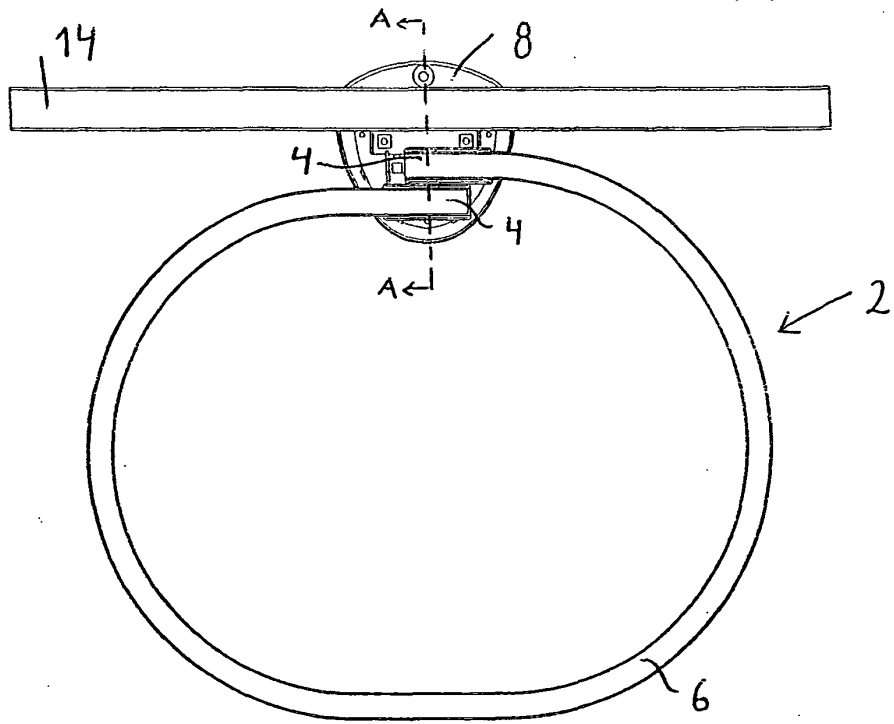


FIG. 3

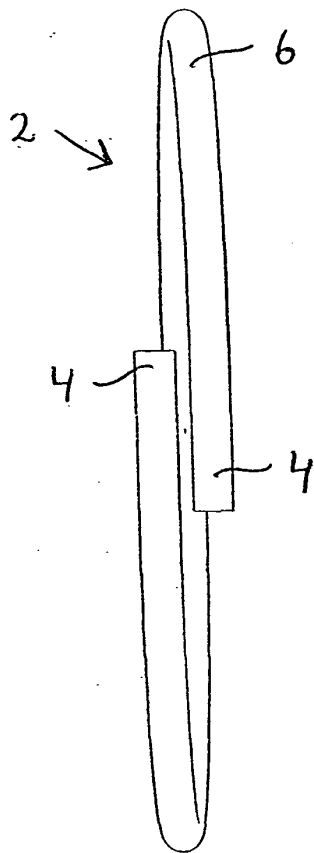


FIG. 4

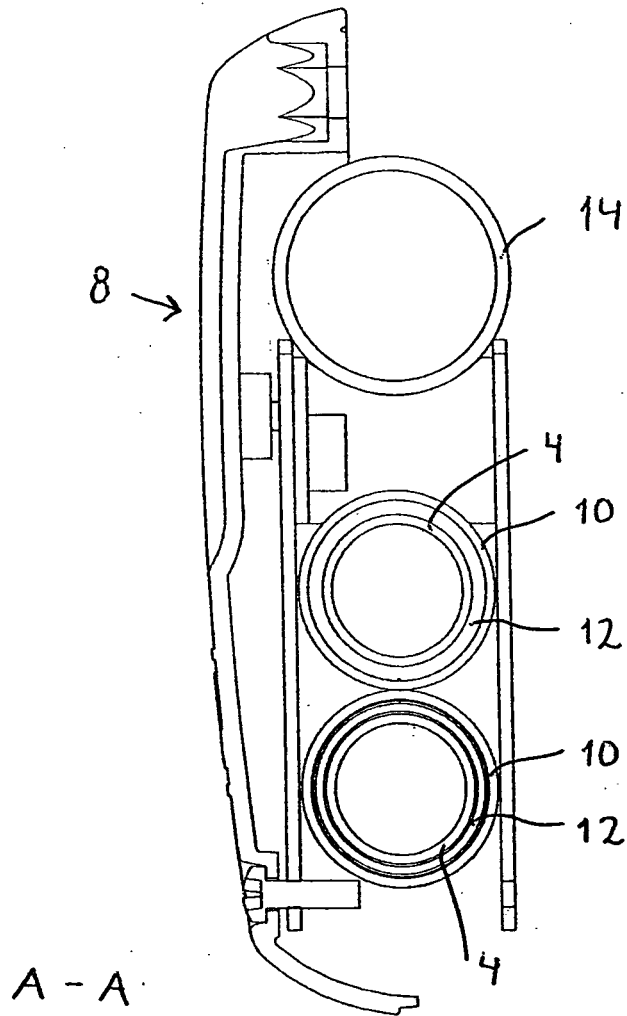
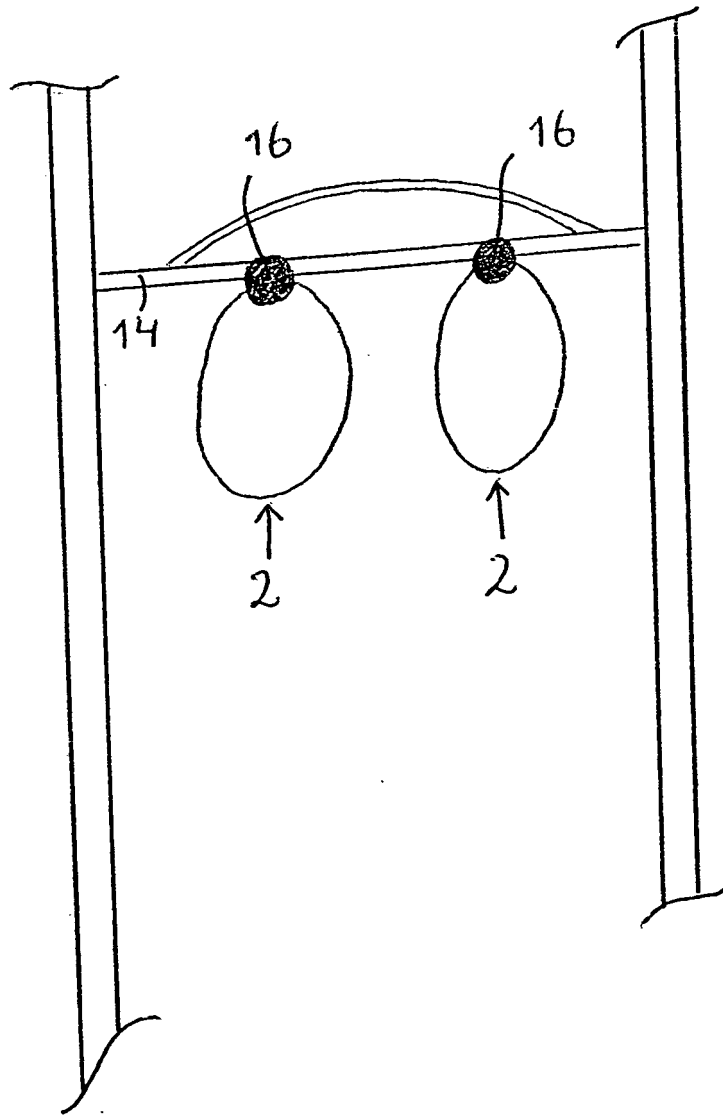


FIG. 5



**REFERENCES CITED IN THE DESCRIPTION**

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