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(54) **STRUCTURE FOR PRACTICING THE
ACROBATIC AND LUDIC FORM OF SPORT**

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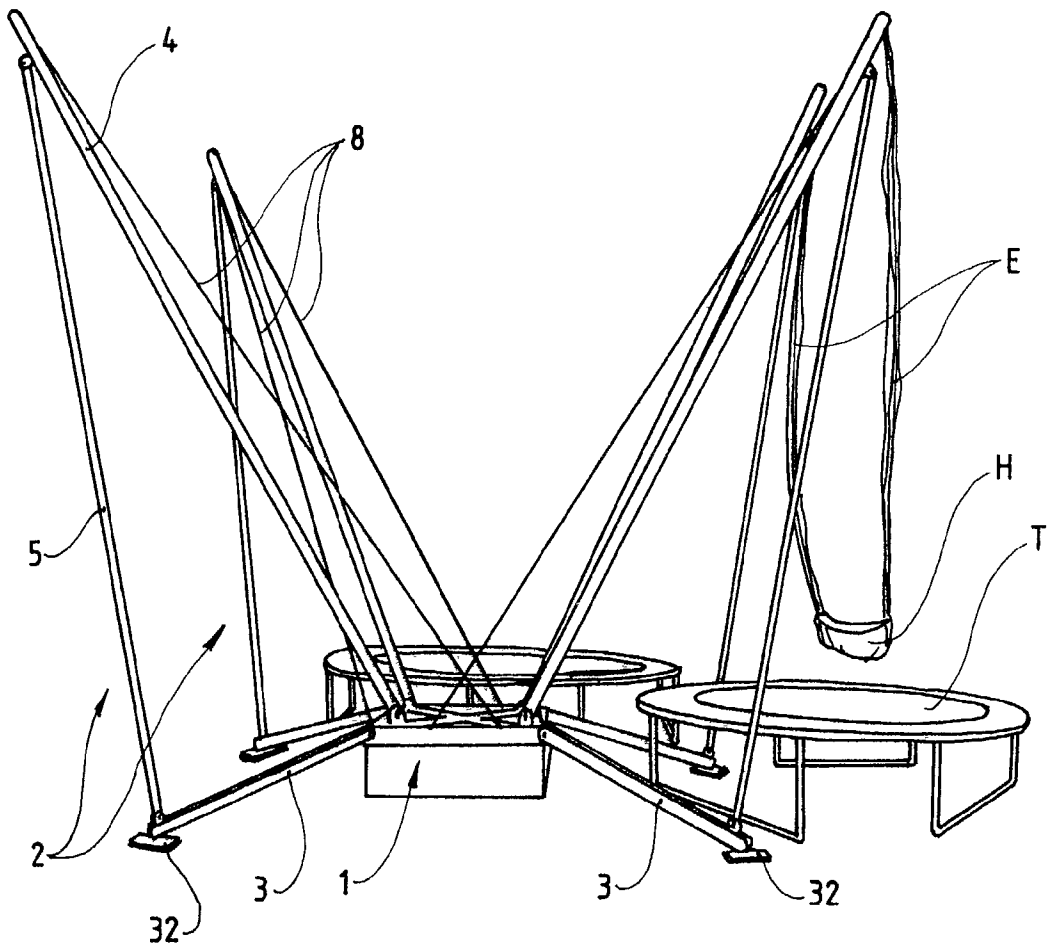
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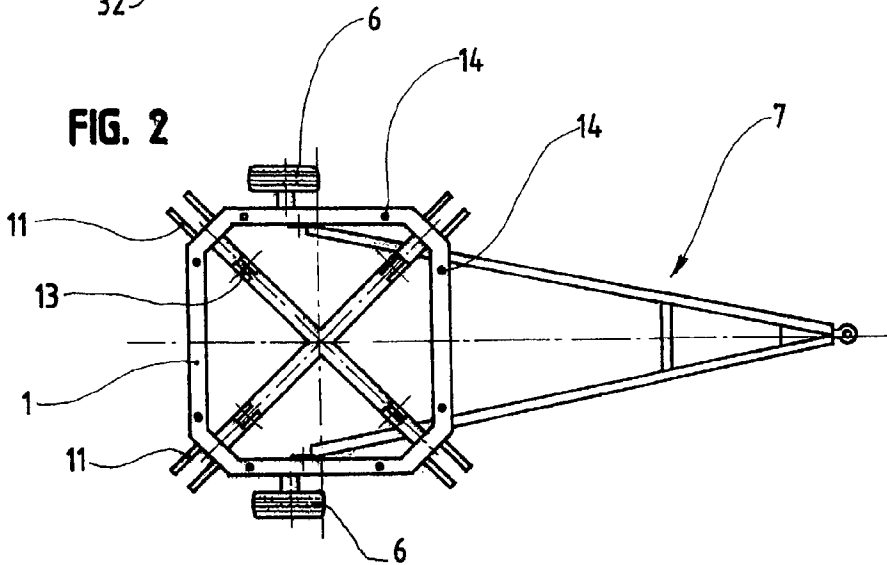
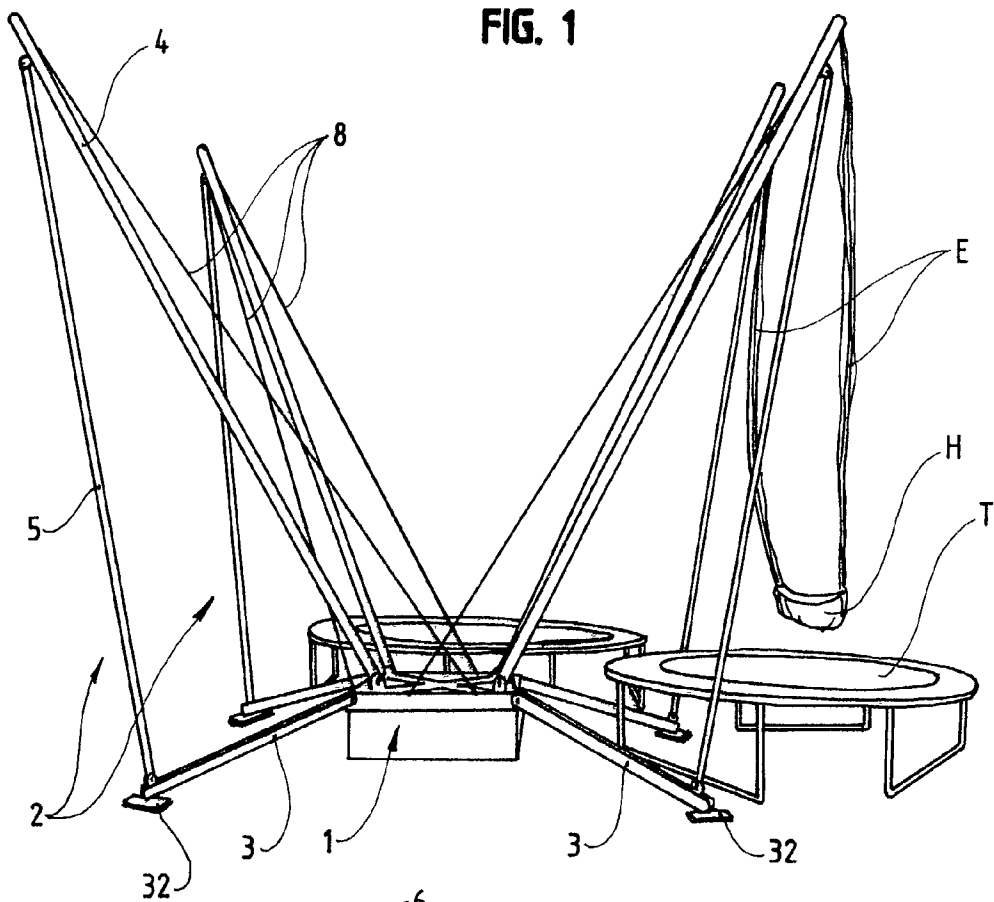
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(57) **ABSTRACT**

The invention relates to a structure for practicing the acrobatic and ludic form of sport consisting in creating figures in the air while being hung from elastic means (E) and, eventually, while bouncing on a flexible and/or elastic surface (T), the structure being formed by assembling elements (3, 4, 5) that create several exercising areas comprising, each, a pair of hanging-up points (41) at which the elastic means (E) are hooked in. It includes a base (1) which aggregates (2) of elements (3, 4, 5) are made integral with, independently from each other, each of the aggregates (2) having a globally triangular shape and being made integral with the base (1) through one of its angles and resting on the floor through another angle, while the third angle (41) forms one of said hanging-up points.





STRUCTURE FOR PRACTICING THE ACROBATIC AND LUDIC FORM OF SPORT

RELATED U.S. APPLICATIONS

[0001] Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

REFERENCE TO MICROFICHE APPENDIX

[0003] Not applicable.

[0004] 1. Field of the Invention

[0005] The present invention relates to a structure for practicing the acrobatic and ludic form of sport consisting in creating figures in the air while being hung from elastic means and, eventually, while bouncing on a flexible and/or elastic surface.

[0006] In a particular embodiment, the means consist of elastic straps, while the elastic surface consists of a trampoline, so that the user makes jumps in the vertical direction using the combined effects of both the straps and the trampoline.

[0007] 2. Background of the Invention

[0008] Structures allowing practicing this form of sport are already known, namely the one described in WO 01/24900, which consists of a play-gymnastic structure organized about a central element, such as a vertical post fastened to the floor, preferably bearing a fourfold arrangement of intersecting supporting poles radially extending upwardly and outwardly, each of these poles being individually combined with a lateral supporting pole fastened to the floor, extending upwardly towards a proximal point at the base of its respective supporting poles; in addition, a nearly vertical compression-load framework is fastened, at the level of its lower ends, close to each lower end of the supporting poles, and at the level of its upper ends, close to the outer ends of its respective hanging supporting poles. Some rigidity is imparted to this X-shaped structure through a plurality of tensioning cables arranged in the form of a triangle, extending upwardly while forming a determined angle between the proximal point of anchoring to the floor of the lateral poles fastened to the floor and a much higher point on the supporting poles. The elastic elements for practicing the gymnastic activity being fastened at a distance from each other between the outer distal ends of each of the supporting poles.

[0009] Such a structure has numerous drawbacks, in addition to the complexity of its mounting due to the number of elements it is comprised of and to their tangling up, the space remaining for the exercises is restricted, or at least limited at the inner side because of the presence of the central mast. It occurs indeed frequently, namely with beginners in this form of sport, that the motion, which has to be essentially a vertical one, is performed with a swinging that is progressively amplified, resulting into the exerciser getting the feeling that he will strike against the central mast. This feeling is an obstacle for the exerciser's quick progress, because of the feeling of lack of safety.

[0010] In order to cope with this drawback, it could be contemplated to separate the exercise areas farther from the central mast, or the like, which would result, as another drawback, into a larger space occupied by the complete installation.

[0011] Furthermore, it is not possible for a person, for example an instructor, to pass from one trampoline to another one, located diametrically opposite, otherwise than from the outside, which is prejudicial to a quick stepping in.

[0012] Finally, such a structure must compulsorily be mounted integrally, even for being used by only one exerciser.

BRIEF SUMMARY OF THE INVENTION

[0013] This invention is aimed at providing a structure for practicing the acrobatic and ludic form of sport consisting in creating figures in the air while being hung from elastic means and, eventually, while bouncing on a flexible and/or elastic surface, which allows coping with the various above-mentioned drawbacks, while it is of a simple construction and easy to be implemented.

[0014] According to the invention, the structure for practicing the acrobatic and ludic form of sport consisting in creating figures in the air while being hung from elastic means and, eventually, while bouncing on a flexible and/or elastic surface, said structure being formed by assembling elements that create several exercising areas comprising, each, a pair of hanging-up points at which said elastic means are hooked in, and it is characterized in that it includes a base which aggregates of elements are made integral with, independently from each other, each of said aggregates having a globally triangular shape and being made integral with said base through one of its angles and resting on the floor through another angle, while the third angle forms one of said hanging-up points.

[0015] According to an additional feature of the structure according to the invention, each of the aggregates of elements extends in a vertical plane, radial to the base, and is comprised of three beams made integral with each other, two by two, and/or with said base.

[0016] According to another feature of the structure according to the invention, for each one of the aggregates, a first beam is fastened, through its one end, to the base, while its other end rests on the floor through a footing, a second beam is mounted, through its one end, on said base, close to the fastening of said first beam, while, at its other end, which forms a fastening point for the elastic means, is mounted an end of the third beam the other end of which rests against the first one, substantially straight up with respect to said footing.

[0017] According to an additional feature of the structure according to the invention, each one of the aggregates is guyed.

[0018] According to a variant of the structure according to the invention, the second beam is a double beam made integral with the base through two fastening points separated from each other.

[0019] This construction allows eventually omitting a rigging, thus increasing the space available between the various aggregates of elements, namely at the level of the base.

[0020] According to a particular embodiment of the structure according to the invention, the base consists of a platform designed capable of being fixed to the floor.

[0021] According to another particular embodiment of the structure according to the invention, the base consists of a platform provided, on the one hand, with wheels authorizing the displacement of the aggregate and, on the other hand, with stabilizing elements, such as support feet.

[0022] According to an additional feature of the other particular embodiment of the structure according to the invention, the base consists of a platform comprised of several foldable portions, connected in a hinging way to a frame supported by wheels.

[0023] Preferably, the beams are made integral with each other and/or with the base through hinging joints allowing pivoting about horizontal axes.

[0024] This feature is particularly advantageous in the case of a movable platform; it allows indeed stabilizing the structure, irrespective of the configuration of the ground. It should be noted, in this respect, that it is possible to contemplate beams the length of which can be varied.

[0025] Furthermore, it is of course possible to contemplate, for some hinging joints, several axes of pivoting, associating locking means to them.

[0026] The means for fixing the beams to each other and/or to the platform are obviously reversible, so as to allow an easy dismantling and mounting.

[0027] Each of the aggregates of elements is independent from the other ones, which facilitates the mounting and dismantling of the structure, in contrast to the other structures known hitherto. In addition, it is possible to mount only two elements for allowing one user to practice the form of sport.

[0028] Furthermore, the structure according to the invention allows omitting a central element, such as a mast, likely to form an obstacle for the users.

[0029] In addition, the invention allows contemplating the construction of structures allowing more than four exercise areas, which is not possible with the presently known structures. Indeed, when multiplying the number of exercise areas, while keeping sufficient space for performing these exercises, said areas should be separated farther from the center of the structure; now, though this does not give rise to any problem with the structure according to the invention, since the aggregates are independent from each other and it is enough to widen the base, the same does not apply for the other structures the construction of which is based on the use of a central mast and the intersecting of beams.

[0030] The advantages and the features of the structure according to the invention will become clear from the following description, with reference to the attached drawing, which shows several non-restrictive embodiments of it.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0031] In the attached drawing:

[0032] **FIG. 1** is a schematic perspective view of a structure for practicing an acrobatic and ludic form of sport

consisting in creating figures in the air while being hung from elastic means and, eventually, while bouncing on a flexible and/or elastic surface.

[0033] **FIG. 2** is a schematic plan view of a portion of a particular embodiment of the same structure.

[0034] **FIG. 3** is a schematic elevational view of a portion of the same structure.

[0035] **FIG. 4** is a schematic partial plan view of a variant of a structure according to the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0036] When referring to **FIG. 1**, one can see a structure according to the invention, aimed at allowing practicing an acrobatic and ludic form of sport consisting in creating figures in the air while being hung from elastic means E and, eventually, while bouncing on a flexible and/or elastic surface, such as a trampoline T.

[0037] In a known way, the user is aimed at being tightened in a harness H fastened to the ends of two elastic straps E, while the other two ends of the latter are fastened to two fastening points located at a height and separated from each other.

[0038] It should be noted that the elastic means can also consist of springs.

[0039] The structure according to the invention includes a base 1 resting on the floor and with which are made integral aggregates 2 of three elements 3, 4 and 5 extending in radial vertical planes. It should be noted that, in the embodiment shown, the aggregates 2 are four in total and are therefore angularly spaced apart from each other by 90° and that they delimit, two by two, the spaces in which are placed the trampolines T, only two of which are shown in the figure.

[0040] In the embodiment shown, the base 1 consists of a base plate resting on the floor, which can consist, for example, of a concrete block topped by a metallic platform.

[0041] **FIG. 2** shows a particular embodiment in which the base 1 consists of a welded mechanical platform resting on wheels 6 provided with a lever 7 allowing moving the whole of the structure. Of course, this embodiment is provided with stabilizing means, not visible, such as for example supporting feet.

[0042] When referring now to **FIG. 3**, which shows an aggregate 2, one can see that the elements 3, 4 and 5 are comprised of three beams, i.e. a first beam 3, one end 30 of which is made integral with the base 1, while its other end 31 rests on the floor S through a footing 32; a second beam 4, one end 40 of which is made integral with the base 1, close to the fastening point for the end 30 of the beam 3, while, close to the other end 41 is made integral the end 50 of a third beam 5 the other end 51 of which is made integral with the beam 3, not far from the end 31 of the latter.

[0043] It should be noted that it is preferably contemplated to make the footing 32 integral with the end 31 of the beam 3, through an element of an adjustable length, in order to allow compensating the eventual slopes of the ground of installation.

[0044] The connections between the various beams 3, 4 and 5 are pivoting. Thus, the end 30 of the beam 3 is pivotally mounted, through a pivot 10, on a retaining plate 11 made integral with the platform 1, while the footing 32 is pivotally mounted, through a pivot 33. Furthermore, the end 40 of the beam 4 is pivotally mounted, through a pivot 12, on a retaining plate 13 integral with the platform 1, while close to the end 41 laterally protrudes a retaining plate 42 allowing making integral the end 50 of the beam 5, by means of a pivot 43, and the end 51 is made integral, through a pivot 34, with a retaining plate 35 integral with the beam 3 close to the end 31.

[0045] Of course, other constructions are possible, the one shown being however the preferred embodiment.

[0046] The various hinging joints allow stabilizing the whole of the structure as a function of the ground, in particular when the embodiment shown in FIG. 2 is concerned, which is aimed at being moved.

[0047] The pivots 10, 12, 43, 34, even 33, are removable, so as to allow an easy dismantling of the aggregates 2 which can advantageously be mounted and dismantled separately.

[0048] The aggregates 2 are particularly strong; however, in order to avoid transversal displacements, they are guyed by means of cables 8, two for each aggregate 2, which can be seen in FIG. 1.

[0049] The cables 8 connect the end 41 of the beam 4 to the base 1, at fastening points 14 that can be seen in FIG. 2, arranged close to the retaining plates 11, so that both cables 8 of a beam 4 are fixed at two points 14 close to the retaining plates 11 for making the beams 4 integral with the adjacent aggregates 2.

[0050] It should be noted that, according to a variant, the beam 4 can be replaced by two beams made integral with the base 1 at locations separate from each other and joining at their upper end. These beams can, for example, take the place of the cables 8, which are then no longer required.

[0051] Furthermore, it is possible to provide on one and the same structure for aggregates 2 of different dimensions, namely as far as the length of the beam 4 is concerned, with a view to change the height of the fastening points for the elastic means E.

[0052] When referring now to FIG. 4, one can see a variant of the structure according to the invention, which is designed for more than four users, in this case six.

[0053] This structure includes a circularly shaped base 1 which six aggregates 2 are radially made integral with, only the beams 3 of which are shown.

[0054] The base 1 consists, in the embodiment shown, of a welded mechanical round platform including two semi-circular portions 15 connected in a hinging way to a frame 16 mounted on wheels 6, so as to allow folding back one of the parts 15 vertically against the other one, thereby facilitating the transportation of the structure.

We claim:

1. Structure for practicing the acrobatic and ludic form of sport consisting in creating figures in the air while being hung from elastic means (E) and, eventually, while bouncing on a flexible and/or elastic surface (T), said structure being formed by assembling elements (3, 4, 5) that create several exercising areas comprising, each, a pair of hanging-up points (41) at which said elastic means (E) are hooked in, characterized in that it includes a base (1) which aggregates (2) of elements (3, 4, 5) are made integral with, independently from each other, each of said aggregates (2) having a globally triangular shape and being made integral with said base (1) through one of its angles and resting on the floor through another angle, while the third angle (41) forms one of said hanging-up points (41).

2. Structure according to claim 1, characterized in that each of the aggregates (2) of elements (3, 4, 5) extends in a vertical plane, radial to the base (1), and is comprised of three beams (3, 4, 5) made integral with each other, two by two, and/or with said base (1).

3. Structure according to claim 2, characterized in that for each one of the aggregates (2), a first beam (3) is fastened, through its one end (30), to the base (1), while its other end (31) rests on the floor through a footing (32), a second beam (4) is mounted, through its one end (40), on said base (1), close to the fastening (11) of the first beam (3), while, at its other end (41), which forms a fastening point for the elastic means (E), is mounted an end (50) of the third beam (5) the other end (51) of which rests against the first one (3), substantially straight up with respect to said footing (32).

4. Structure according to any of the preceding claims, characterized in that each one of the aggregates (2) is guyed.

5. Structure according to claim 3, characterized in that the second beam (4) is a double beam made integral with the base through two fastening points separated from each other.

6. Structure according to any of the preceding claims, characterized in that the

7. Self-propelled device (1) according to any of claims 1 to 4, characterized in that it includes control means (14) in the form of a control panel capable of being connected, by means of a cable or through remote control means such as a radio or the like, to said self-propelled device (1).

8. Self-propelled device (1) according to any of the preceding claims, characterized in that it includes auxiliary rolling means (26) designed capable of providing it with the necessary stability to allow it to move after it has been dissociated from a load (2), such auxiliary rolling means (26) being designed retractile, through lifting means (30), so as to allow releasing their wheels (28, 29) from resting on the ground once the self-propelled device (1) has been made integral with the load (2).

9. Self-propelled device (1) according to any of the preceding claims, characterized in that it is designed capable of receiving, at the front portion (31), one or several accessories, namely hydraulically operated accessories.

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