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(54) **Equipment for a funfair**

(57) An equipment for a funfair comprises:
- a rigid closed shell provided internally thereof with at least a place for a passenger;
- a frame for supporting the shell,
- being means for constraining and supporting the shell

which enable the shell to rotate about an axis which varies continuously throughout a range of a plurality of axes having any orientation;
- means for imparting rotations on the shell, which rotations are unordered with respect to the axis.

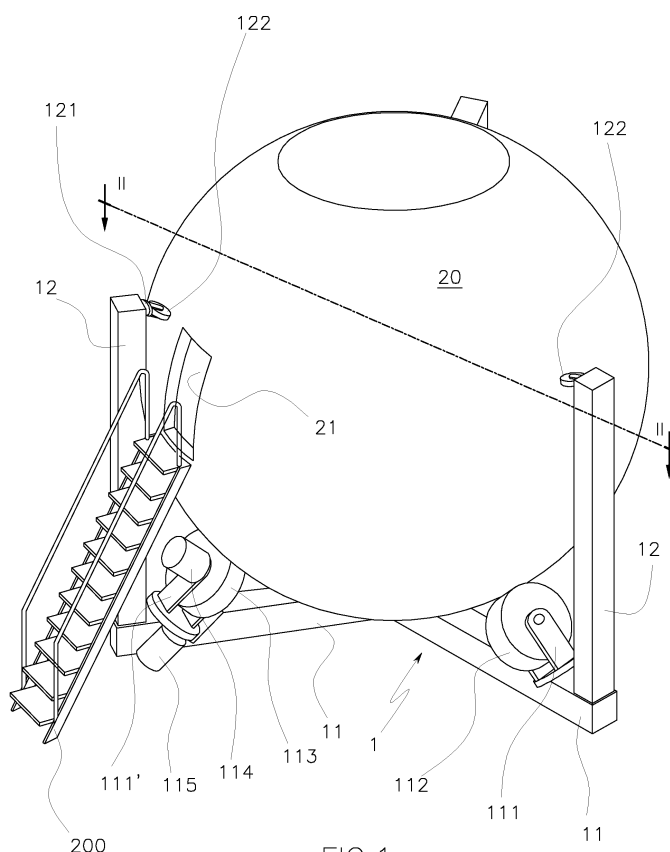


FIG.1

Description

[0001] The invention relates to equipment for a funfair, affording places to a certain number of passengers who are solidly anchored internally of a moving ride, for example constituted by a closed shell.

[0002] The invention relates to the field of equipment which offers passengers a random series of unordered and unpredictable ride trajectories.

[0003] The passengers' enjoyment consists in being subjected to centrifugal forces and accelerations which vary continuously in direction and sort.

[0004] The aim of the invention is to make available an equipment which realises the above movements on a continuous trajectory which varies without any continuity of course, but randomly.

[0005] The aim is attained by an equipment which rotates unorderedly about an axis which continuously changes within a bundle of axes all passing through a point.

[0006] The point can be fixed or can be subjected to unordered movements.

[0007] The equipment is preferably constituted by a closed shell, generally of an ovoid shape, preferably spherical, internally of which are located places for the passengers to sit, for example solidly anchored seats which receive and securely hold the passengers.

[0008] The shell is supported on a frame by means for constraining which enable the shell to rotate about a diameter axis thereof which axis changes continuously thanks to the motion imparted on the shell.

[0009] The means for constraint can be of various nature, and in themselves of known type, such as a trio of pirouetting wheels, a trio of idle spherical bearings, or even means for support based on an air cushion, or simple sliding supports having a low friction coefficient.

[0010] The motion allowed by the means for constraint comprises a succession of rotations which, in the case of a spherical shell, maintain the centre of the spherical shell fixed with respect to the frame.

[0011] The frame can be subjected in turn to unordered movements.

[0012] The invention further comprises means for imparting the desired movements on the shell with respect to the frame, as well as means for imparting the unordered movements on the frame.

[0013] The constructional and functional advantages and characteristics of the invention will emerge clearly from the detailed description that follows, illustrated by the figures of the appended drawings, which illustrate a preferred but non-limiting embodiment, given by way of example.

[0014] The embodiment relates to a spherical shell, but could equally relate to a closed shell having a different configuration.

Figure 1 illustrates the invention in a perspective view;

Figure 2 is a section along line II-II of figure 1;

Figure 3 is a detail of figure 1.

Figure 4 is section along line IV-IV of figure 2.

5 **[0015]** The figures show a frame 1 having a base constituted by three beams 11 which are coplanar and diverging and positioned at 120° from one another.

[0016] A column 12 rises from the ends of each of the beams.

10 **[0017]** At the ends of the beams 11, in proximity to the columns 12, are located two identical forks 111 and a further fork 111', which are each rotatable about an axis thereof, which axis preferably converges together with the axes of the other forks towards a common point, fixed relative to the frame 1.

15 **[0018]** Each of the two forks 111 bears an idle wheel 112, while the further fork 111' bears a wheel 113 keyed on the shaft of an electric motor 114 fixed to the fork.

20 **[0019]** The rotations of the shaft of the motor 114 are controlled by an encoder, not illustrated, and are commanded by an electric processor according to a predetermined program.

[0020] The axis of the fork 111' bearing the motor 114 is connected to the shaft of a motor 115 which causes the fork 111' to rotate at random.

25 **[0021]** The rotations of the fork 111' are controlled by an encoder, not illustrated, and are commanded by an electronic processor according to a predetermined program.

30 **[0022]** A spherical shell 20 rests on the three wheels 112, 113, a centre of which shell 20 preferably coincides with the point of convergence of the rotation axes of the forks 111, 111'.

35 **[0023]** At the top of the columns 12 are located three identical forks 121 which are each free to rotate about an axis thereof, which axis preferably converges, together with the other axes, towards the point of convergence of the rotation axes of the forks 111 and 111'.

40 **[0024]** Each of the three forks 121 bears an idle wheel 122.

[0025] The three wheels 122 are placed in sliding contact with the spherical shell 20 having the centre thereof preferably coinciding with the point of convergence of the rotation axes of the forks 111 and 121.

45 **[0026]** The forks 111 and 121 with the relative wheels realise a system of pirouetting wheels.

[0027] By activating the motor 114 the spherical shell 20 is set in rotation about the axis passing through the centre and parallel to the rotation axis of the wheel 113.

50 **[0028]** By activating the motor 115 the direction of the axis of the motor 114 is changed, as is the rotation axis of the spherical shell 20.

[0029] The rotations of both motors 114 and 115 are controlled by an encoder which commands a halt in a fixed position, which is also the rest position of the spherical shell 20.

55 **[0030]** The spherical shell 20 exhibits a door 21 for opening and gaining access to the inside thereof, which

door, in the rest position, is always in the same place, indicated in figure 1, for access and exit of the passengers to and from the ride, using a staircase 200.

[0031] A ledge 22 is arranged at the same level as the door 21 (figure 2) on an internal side of the spherical shell 20, and fixed by known means which are not illustrated.

[0032] The ledge 22 is on a diameter plane of the spherical shell 20, at an equator of the spherical shell 20, and seats 23 are solidly anchored on the ledge 22, which seats 23 are equipped with security belts for retaining the passengers.

[0033] The spherical shell 20 can also contain a plurality of ledges in parallel positions, or also a series of seats arranged randomly.

[0034] The spherical shell 20 is generally constructed by welding segments of sheet metal having a spherical profile, and can exhibit polar zones thereof constituted by a transparent cap.

[0035] The random activation of the motors 114 and 115 can be commanded either manually or via an electronic processor which responds to a special program. In the above-described embodiment the frame 1 is fixed to the ground; it could however be supported, at least at one of the beams 11, by mobile rest means able to impart unordered motion thereon.

[0036] The mobile rest means are easily predictable by an expert in the field, and are therefore not illustrated.

Claims

1. Equipment for a funfair, comprising:

- a rigid closed shell provided internally thereof with at least a place for a passenger;
- a frame for supporting the shell;
- being means for constraining and supporting the shell which enable the shell to rotate about an axis which varies continuously throughout a range of a plurality of axes having any orientation;
- means for imparting rotations on the shell, which rotations are unordered with respect to the axis.

2. The equipment of claim 1, comprising:

- a rigid spherical shell internally provided with at least a place for a passenger;
- a frame for supporting the shell;
- being means for constraining and supporting the shell which enable the shell to rotate about an axis which varies randomly and continuously throughout a range of a bundle of axes passing through a point;
- means for imparting rotations on the shell, which rotations are unordered with respect to the axis.

3. The equipment of claim 2, **characterised in that** the point is a centre of the spherical shell.

4. The equipment of claim 1, **characterised in that** the means for constraining and supporting the shell are a trio of pirouetting wheels.

5. The equipment of claim 4, **characterised in that** the axes about which the wheels pirouette converge towards a point.

6. The equipment of claim 1, **characterised in that** the means for constraining and supporting the shell are a trio of idle spheres.

7. The equipment of claim 1, **characterised in that** the means for constraining and supporting the shell are means for sliding having a low friction coefficient.

8. The equipment of claim 1, **characterised in that** the means for imparting unordered rotations on the shell are a wheel arranged tangentially of the shell, the wheel being mounted on a fork, an axis of which fork is free to rotate with respect to the frame; a first electric motor having controlled rotations and being mounted on the fork in order to set the wheel in rotation, and a second electric motor having controlled rotations and being mounted on the fork in order to set the fork in rotation with respect to the frame.

9. The equipment of claim 1, **characterised in that** at least a circular ledge is located internally of the shell, on which a series of places for passengers is aligned.

10. The equipment of claim 5, **characterised in that** it comprises an electronic processor which independently commands the rotations of the first and second electric motors according to a program ordering random movements thereof.

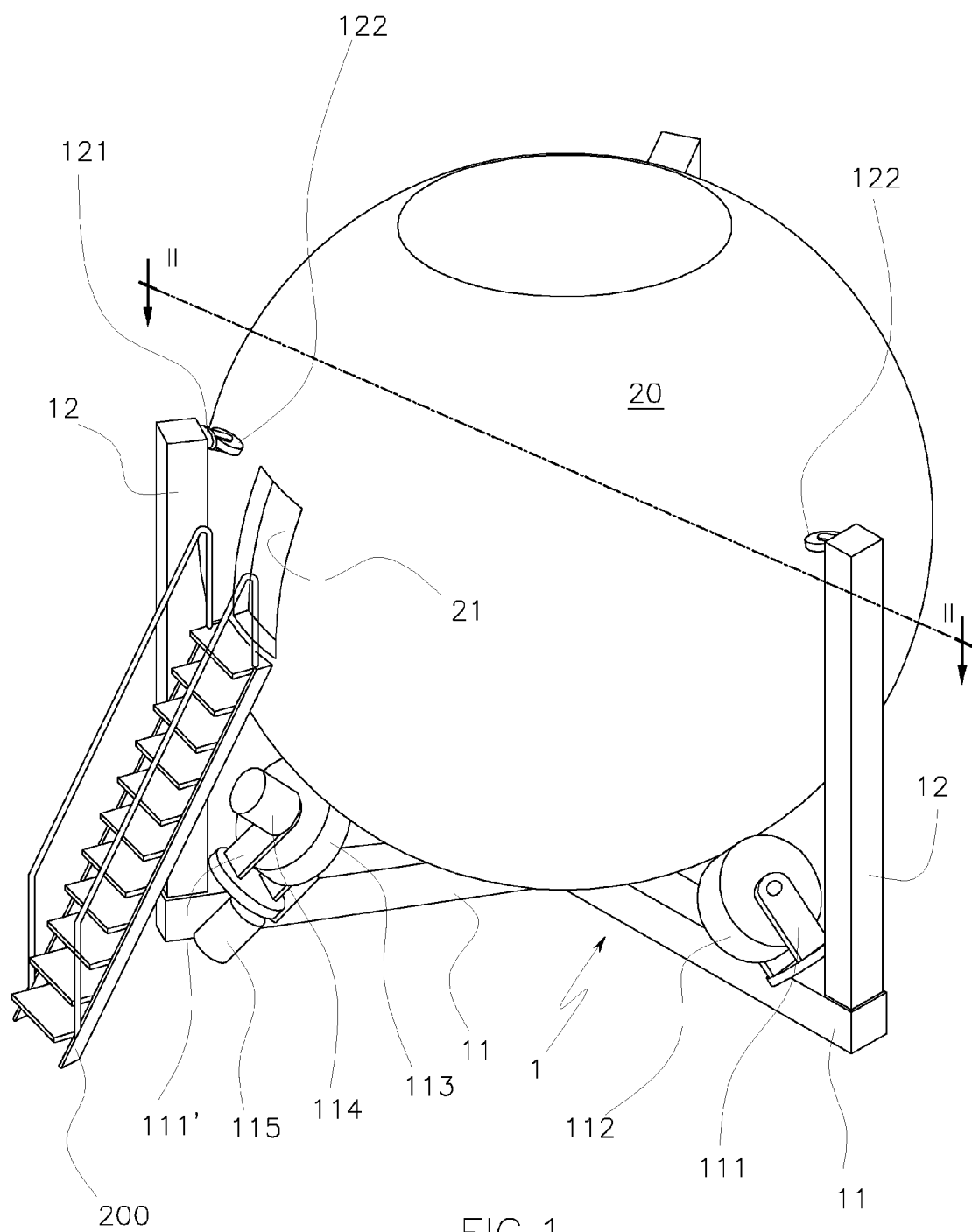


FIG. 1

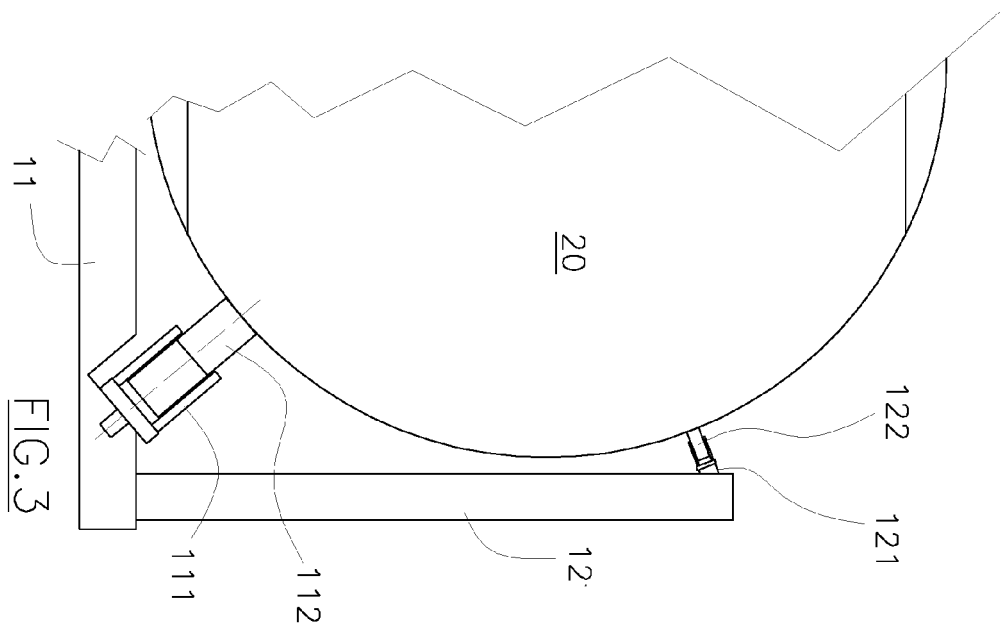
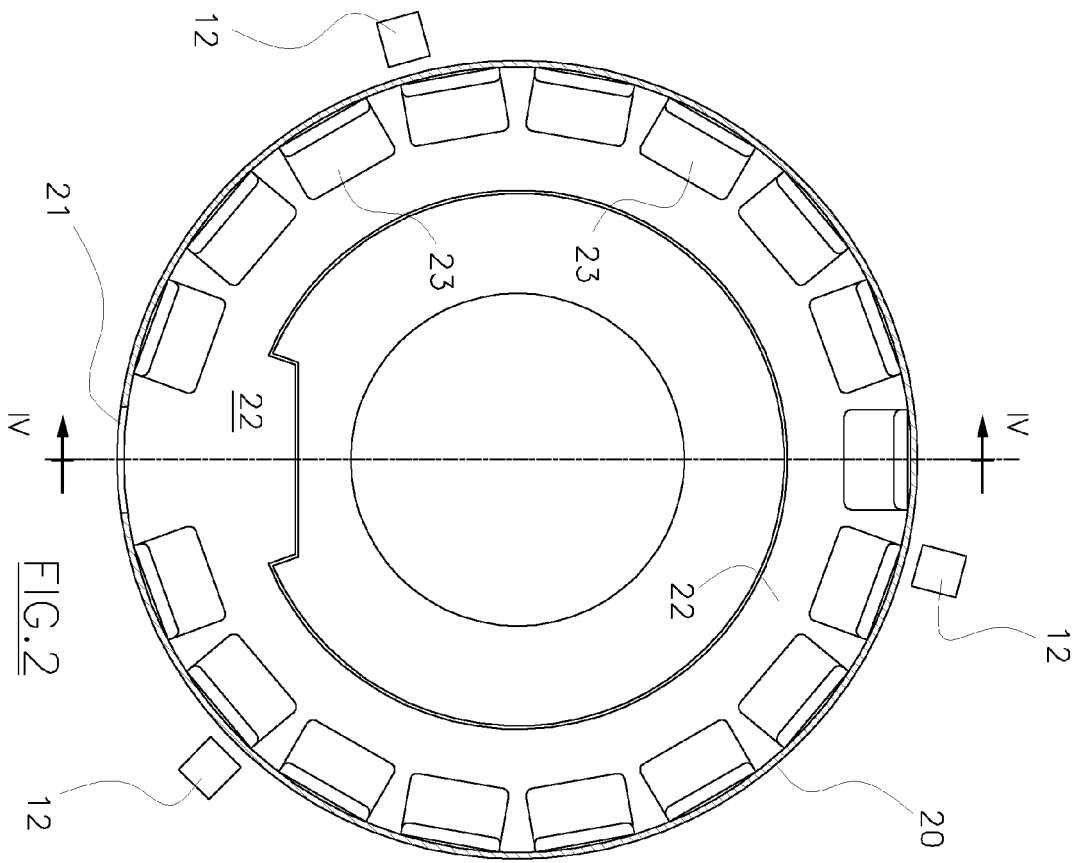
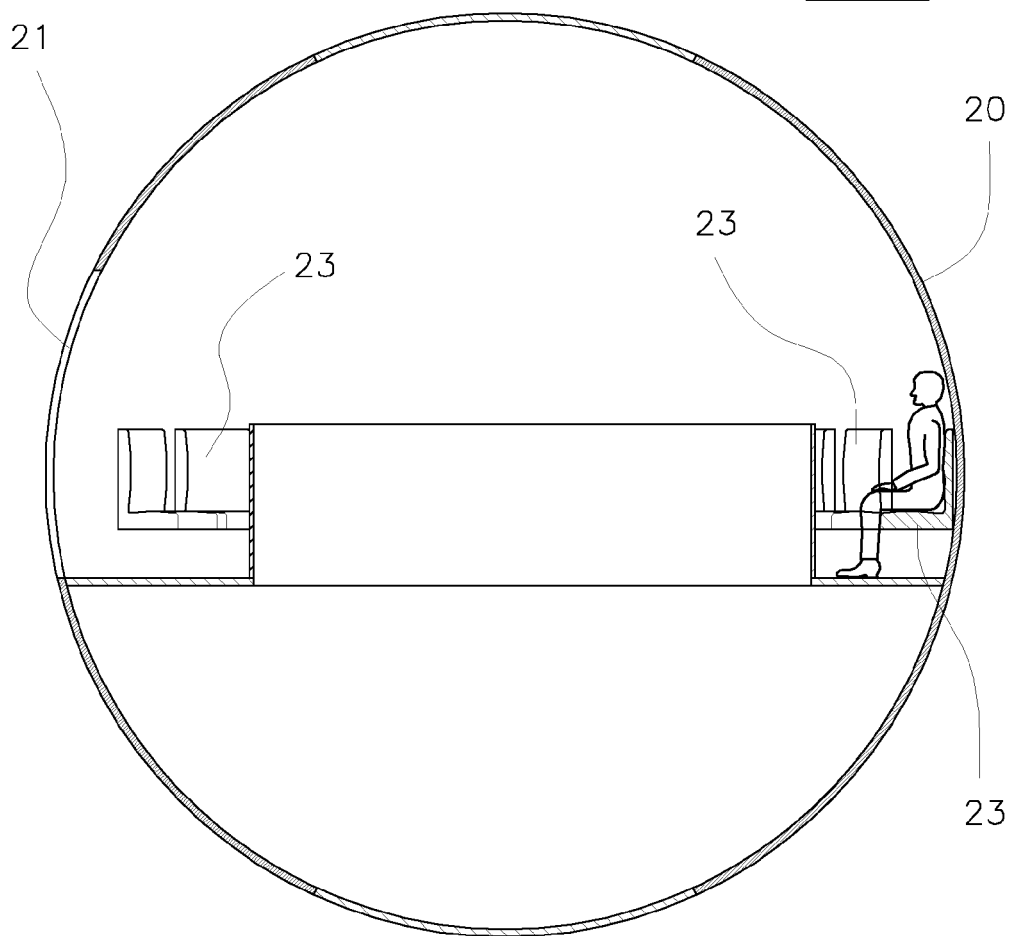


FIG. 4





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 37 30 670 A1 (TUSSINGER PHILIPP [DE]; STOLL VOLKER [DE]) 30 March 1989 (1989-03-30) * column 3, line 41 - column 4, line 23; figures *	1-3,6-8, 10	INV. A63G31/16
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A	-----	1-10	
			TECHNICAL FIELDS SEARCHED (IPC) A63G
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 2 November 2007	Examiner Lucas, Peter
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 12 6607

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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02-11-2007

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