(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 279 422 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
29.01.2003 Bulletin 2003/05

(51) Int Cl.[7]: **A63F 3/00**, A63F 7/00

(21) Application number: **01500201.7**

(22) Date of filing: **27.07.2001**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
Designated Extension States:
AL LT LV MK RO SI

(71) Applicant: **Disenadora Juguetera Valenciana, S.L.**
46023 Valencia (ES)

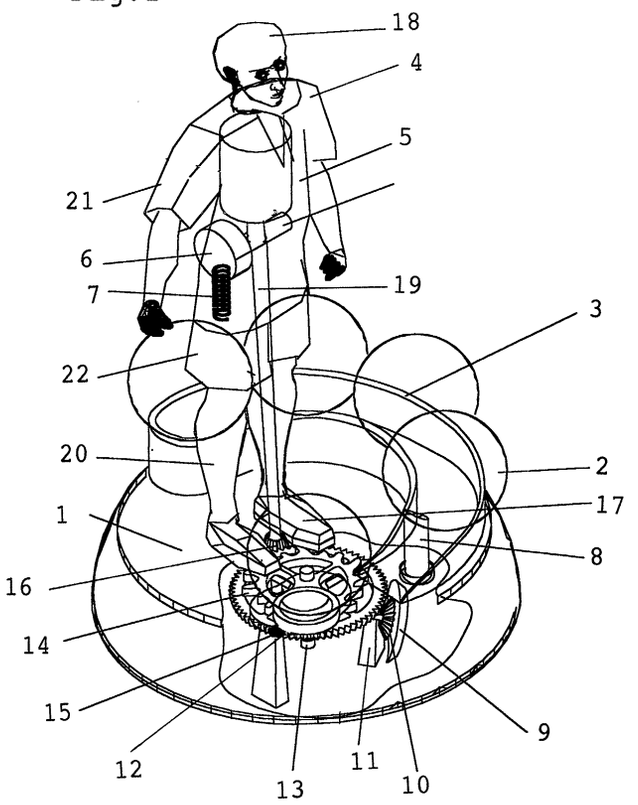
(72) Inventors:
- **Iribarren Navarro, Cesar**
  46011 Valencia (ES)
- **Benages Garcia, Antonio**
  46023 Valencia (ES)

(74) Representative:
Sanz-Bermell Martinez, Alejandro
Játiva, 4
46002 Valencia (ES)

(54) Ball-shooting toy

(57) On a base which houses the means for electrical power supply there is a figure (4) which has one leg fixed to said base and one leg (20) moving from the waist, a track (2) carrying balls (3) and a shutter mechanism for dropping the balls, which allows a temporary release to let one ball drop, synchronised with the movement of the moving leg. The movement is caused by a motor (5) which connets the movement of the leg with the shutter mechanism by means of a gear mechanism.

Fig.1



EP 1 279 422 A1

Description

[0001] This invention consists of a ball-shooting toy which allows balls to be "shot" at a person, intending to be a simulation of a footballer taking shots at a goal.

[0002] There are already numerous toys which have launchers of objects, in many cases balls, which can be classified in the following types:

[0003] The first type could be said to be pneumatic shooters. In this type the discharge of compressed air is used to drive a ball out. This type of shooters require a compressor or a manual air compression mechanism, such as a pump which charges a compressed air tank, meaning that an additional device is required, not being advisable for applications in household toys, but for fairground attractions, etc.. In this case the ball is not shot freely, but restricted to zones not accessible to the person, the action being limited to the shot itself, the result being in any case a direct effect of said shooting action. This type of devices is applied to guns for shooting projectiles, and does not produce the apparent mobility of any other items.

[0004] As a second type, we could mention the mechanical shooters in which the expulsion is performed by the impact of a moving item on the projectile located in a fixed position. This type of launcher requires a mechanism by means of which an elastic medium drives a discharger when a retaining mechanism is released.

[0005] The invention now being put forward refers to a toy consisting of a ball-shooting figure which has a device for measuring out said balls, a positioning device, loading means and discharge means for said shooter, with one of the figure's legs carrying out the function of shooting mechanism.

[0006] More specifically, the figure preferentially consists of the figure of a footballer, with means for replacing both its football kit and its physiognomy having been designed, thus meaning that this can be adapted to suit any aesthetic conditions required.

[0007] Given that the movement of the shooting leg has to be synchronised with the position of the ball, the same electric motor acts on both, both on the mechanism for the following ball, if this is present, and on the mechanism which moves the leg of the figure taking the shot.

[0008] In order to illustrate the object of the invention a sheet of drawings is enclosed which represents the essence of the invention in one figure and in which:

[0009] Said figure illustrates a schematic view of a preferential embodiment of the object of the invention.

[0010] In said figure 1 shows a support base for the other items, 2 being a track, 3 the balls to be shot, 4 a figure, 5 a motor, 6 the mechanism for acting on the shooting device, 7 a return spring for the shooting device, 8 a rod for allowing the balls to fall, 9 an eccentric which acts on said rod, 10 the gear pinion on said eccentric, 11 being the housing for the balls in shooting position, 12 a crown wheel for transmitting the movement from the shaft to the eccentric which acts on the rod, 13 being the shaft of the lower transmission assembly which is supported on the corresponding housing made at the bottom and cover of the base 1, 14 being a rotating part, on the same shaft as said crown wheel, which houses on an eccentric the housing for the balls in launching position, 15 being a spring which acts against the lower transmission assembly, 16 being a pinion for conveying the movement of the motor to the lower assembly, 17 being the fixed leg which is supported on the base 1, 18 being the head of the figure, 19 the axle for conveying the movement of the top to the bottom or vice-versa, 20 being the moving leg, 21 being the shirt, and 22 the shorts of the figure.

[0011] The base 1 covers and houses some of the mechanisms and the means of electrical supply, normally electrical batteries, but possibly also a transformer for direct connection to the electrical mains.

[0012] On said base 1 there is a track 2 holding a number of balls 3 which are deposited on said track which has a certain slope, dropping through the force of gravity, this being preferentially formed of two lateral walls which form two support points for each ball supported on this. Said track 2 can have one or several heights, and in the second case there should be at least one more tilting track superimposed over the first one, so that the balls drop from the lower end of the upper track onto the highest point of the track immediately below. In the same way this can also be configured as a straight line or curve, according to the shape of the base 1.

[0013] On the base 1 there is a figure 4 which includes the mechanism for shooting on one of its legs 20 or moving leg, whilst the other leg has the axle for transmitting the movement inside it.

[0014] The ball shooting is done by means of turning the motor 5 over an eccentric 6 located over the axle for articulating the mobile leg 20, so that after reaching a certain degree of rotation the leg 20 is freed of its rotation, returning to the rest position, assisted in this function by the action of the spring 7. One optional possibility is that of also providing the figure body 4 with a movement synchronised with that of the leg 20, so that the mass produced by the thrust and impact on the ball 3 is greater, producing a more powerful shooting action than what can be obtained merely by the action of the leg 20, also requiring a lower electrical consumption, which means a longer life for the electrical batteries.

[0015] The ball 3 which has to be shot must be positioned in a housing 11 provided on the base 1 for this purpose. This housing must have a fixed, essentially circular shape, which will produce a uniform impact on the ball. It can also consist of a fairly short extended straight or curved track in which the ball 3 can take a variable position, thus producing a much more random shot, and finally there is a possibility of providing the ball-holding device with an swinging movement produced by the mechanism, with a different cycle to that of the shooting,

creating total uncertainty as to the direction that the shot will take.

[0016] The lower end of the track 2 has a shutter mechanism 8 which allows the release of one ball 3, dropping when the rotation of the mechanism means that this acts on a cam 9 which makes the shutter rod drop for a brief time, so that when the force of gravity makes the following ball 3 reach this position, the rod goes back to shutter position, preventing said ball 3 from dropping until the release in the next cycle.

[0017] The mechanism for transmitting the movement consists of a vertical axle 19 which crosses the fixed leg over the base, and is linked to the motor 5. Said motor 5 can be located on the base 1 or inside the body of the figure 4. Said vertical axle 19 meshes directly or indirectly with the axle for articulating the moving leg 20, with the shutter mechanism for dropping the balls 8 and possibly with the device for acting on the ball housing movement.

[0018] In an optional embodiment the movement for housing the ball can be made manually by means of a control located to the rear of the toy, it also being designed for the leg to be able to act through the action of said manual mechanism, for example by means of a trigger, which in turn releases the mechanism for retaining the balls, and disconnecting the connection to the electrical motor in said "manual mode".

[0019] One option available with this toy is that of providing the free members with articulation means which allow the child using the toy to also give the figure 4 the desired pose.

[0020] Given that the toy will foreseeably be commercially linked with certain football teams, it is also intended to provide for the replacement of the head (that of any real player) as well as the shirt, the shorts and the socks, so that this can be adapted to any real situation, said options being able to be marketed separately. The shorts must be open at the side for the fixed leg, and have means for fastening this.

[0021] Another option provided consists in providing the toy with a voice, by means of adding a chip and the corresponding speaker, allowing messages to be uttered either at random or connected with particular operation positions.

[0022] This is for application in the toy industry.

Claims

1. A ball-shooting toy, consisting of a base holding a figure, a mechanism for shooting balls, **characterised in that** the base has: a ball-holding track, a housing for a ball in the position ready to be shot, a shutter mechanism for the balls dropping onto said track, a figure; the track being formed by at least one tilting ramp on which the balls are placed; the figure being provided with a support on the base on its legs, and housing the following parts: a mechanism which allows the articulation of one of its legs and a fast return of the leg to its rest position through the action of an elastic item; said leg being the part that constitutes the shooting mechanism and which acts on its return through the impact on the ball located in the shooting position; the assembly being providing with means of electrical supply.

2. A ball-shooting toy, **characterised** according to claim 1, in that the housing for the balls in position ready to be shot out is formed of a small straight or curved track, which allows random placing of the ball to be shot.

3. A ball-shooting toy, **characterised** according to claim 1, in that the housing for the balls in position ready to be shot out is mobile in single or two-way movement.

4. A ball shooting toy, **characterised** according to any of claims 1 to 3, **characterised in that** the mechanism consists of a vertical axle connected to an electrical motor, which meshes directly or indirectly with the shaft for articulation of the leg, with the mechanism for preventing the balls from dropping, and possibly with the device acting on the movement for the ball housing.

5. A ball-shooting toy, **characterised**, according to any of the previous claims, in that the shutter mechanism for preventing the balls from dropping consists of a vertical rod which acts by means of a cam connected to the rotation mechanism, so that said rod is moved, allowing a ball to drop through gravity for a brief interval of time.

6. A ball-shooting toy, **characterised** according to any of the previous claims, in that the moving housing of the balls in shooting position meshes with a manual control driven from the rear, said control being able to be connected or released from said mechanism, freeing the automatic mechanism when this is connected.

8. A ball-shooting toy, **characterised** according to previous claims in that the trunk, the head and the free members are provided with means for articulation which allow different positions of the figure to be assumed.

9. A ball-shooting toy, **characterised** according to the previous claims in that the head can be taken off and replaced.

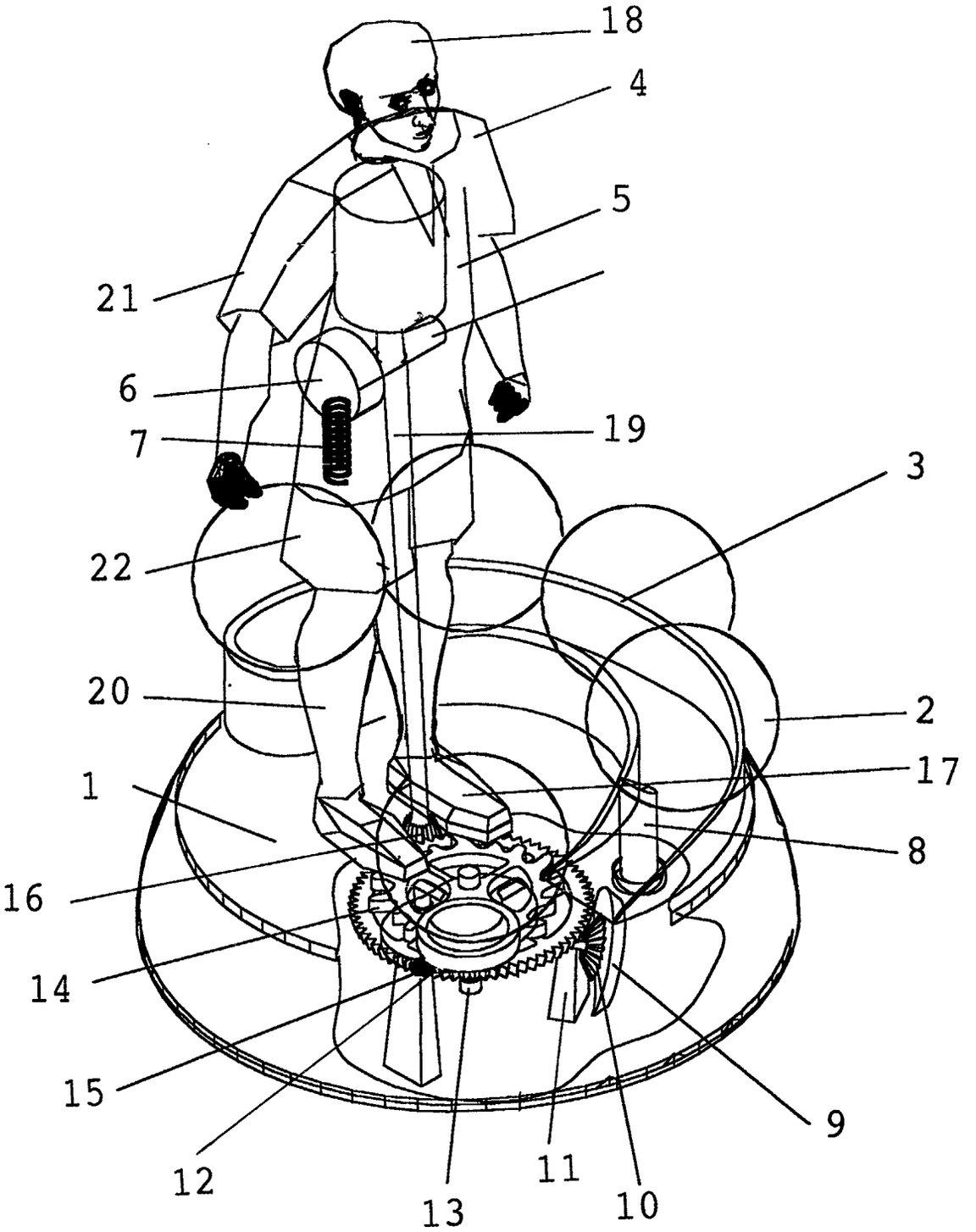
10. A ball-shooting toy, **characterised** according to the previous claims, in that the kit is removable and replaceable, the shorts having a means for fastening on the fixed leg.

11. A ball-shooting toy, **characterised** according to previous claims, in that this is provided with a voice, allowing messages to be uttered either at random or connected to particular operative positions.

12. A ball-shooting toy, **characterised** according to previous claims, in that the track is formed of two lateral guide walls.

13. A ball-shooting toy, **characterised** according to previous claims, in that the track has several different heights, determining the location of a greater number of balls than on the simple track, so that the fall of a ball from the lower track determines the displacement by one position of each of the balls located in each of the tracks.

Fig.1



European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 01 50 0201

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	DE 363 555 C (THIEL, FRITZ) * page 1, line 7 - line 58; figure 1 *	1	A63F3/00 A63F7/00
A	FR 1 153 889 A (RIVERO-FERRO JUAN) 28 March 1958 (1958-03-28) * page 2, line 19 - line 77; figure 2 *	1	
A	US 3 888 485 A (CONTI CARL) 10 June 1975 (1975-06-10) * column 2, line 30 - column 3, line 10; figure 2 *	1	
A	US 2 506 190 A (BARNES RAY E) 2 May 1950 (1950-05-02) * column 2, line 2 - line 39 *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A63F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	11 February 2002	Lucas, P

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

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 01 50 0201

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

11-02-2002

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 363555 C		NONE	
FR 1153889 A	28-03-1958	NONE	
US 3888485 A	10-06-1975	NONE	
US 2506190 A	02-05-1950	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82