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(71) Applicants:
• **Hasbach Lugo, Mónica**
C.P. 14050 México D.F. (MX)
• **Aguilar Velazquez, Jonatan**
C.P. 03500 Mexico D.F. (MX)
• **Salaz Perez, José Antonio**
C.P. 03100 México D.F. (MX)

(72) Inventors:
• **Hasbach Lugo, Mónica**
C.P. 14050 México D.F. (MX)
• **Aguilar Velazquez, Jonatan**
C.P. 03500 Mexico D.F. (MX)
• **Salaz Perez, José Antonio**
C.P. 03100 México D.F. (MX)

(74) Representative: **Temino Ceniceros, Ignacio**
Abril Abogados
Calle Amador de los Rios, 1 - 1°
28010 Madrid (ES)

(54) **BALL SEGMENT AND COUPLING ELEMENTS WHICH ARE USED TO FORM A FUNCTIONAL BALL**

(57) The present invention is related to the field of toys and/or promotional articles and/or ornamental articles. More specifically it refers to a promotional toy formed by segments of a ball and connecting elements which form a functional ball. The advantage of this invention over the state of the art resides in the fact that the present invention allows for assembling a complete ball using only the bare hands, once all of the necessary segments are collected. It can be used for publicity of consumer products and has connecting means to achieve the first objective and allow it to be used as a ball to be kicked. The segment of a ball and the connecting elements which form a functional ball are **characterized by** consisting of a connecting system made up of a connecting element affixed to the segment of the ball and an accessory connecting element; the fixed connecting element consisting of a projection tangential cut on the edge of the segment of the ball and on the edge another longer projection parallel to the edge, a space being left between the peripheral edge of the segment and the inside face of the parallel projection.

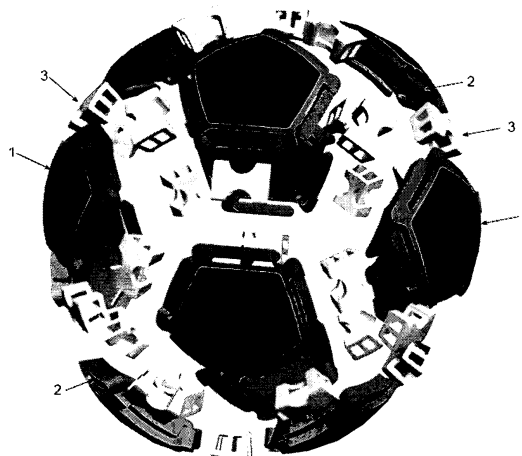


Fig. 2

Description

FIELD OF THE INVENTION

[0001] The present invention is related to the field of toys and/or promotional articles and/or ornaments. More specifically it refers to a promotional toy formed by segments of a ball and elements which join said segments, producing a functional ball.

BACKGROUND OF THE INVENTION

[0002] Due to the popularity of soccer and its skilled players, there have been over the years many promotional toys related to said sport, the players and the teams who play the sport.

[0003] These toys may be anything from stamps with the image of the players on them to paste into albums, to cards with peripheral projections for joining them to other cards which together form various shapes. These cards are flat and obviously form flat geometric shapes. These cards can be printed with various figures and characters.

[0004] While these segments which consist of cards with peripheral projections comply perfectly with the function of constituting a team, having on their geometric body the figures of members of a team, this geometric body is not a ball nor does it have the mechanical characteristics of a ball.

[0005] The characteristics of the means of joining these bodies made up of said cards mean that the body is easily collapsible and any slight slipping causes the body to deform and requires that someone fix it.

[0006] State of the art balls are usually inflatable. We have the examples described and protected by the U.S. Patents 4,354,679, 5,752,890 and 6,402,647. These are balls which are ideal for official games. However, they cannot be used for other uses which we may wish to give them.

[0007] For some uses it is necessary for the ball to be easily assembled and disassembled, for example, using only the bare hands, in order to comply with promotional needs. If the ball is not easily assembled and disassembled it cannot be used as packaging or as a container for consumer products, as it would be necessary to destroy it in order to remove the contents.

[0008] None of the existing state of the art functional balls can be formed through collecting the parts by buying a relatively low priced product which has one part of the ball and thus, by buying the product several times, completing the segments necessary to form the complete functional ball.

[0009] Nor is it possible for the existing state of the art functional balls to be formed by the pieces which make up their exposed faces having various designs which make it desirable to exchange the segments with other collectors in order to form a ball with all the segments having the figures of the players from only one team.

[0010] Another necessity for product marketers is to give their product containers a second use and the state of the art balls do not fulfill this function.

[0011] There are state of the art products which are in the shape of soccer balls and there are products which come in containers which form soccer balls. However, these are not functional balls, that is to say, no one would think of using chocolate shaped balls as real soccer ball to play a game of kick ball with, nor could the container suitably be used to play soccer.

[0012] A structure of a segment of a soccer ball which could fulfill all these aforementioned functions would be an important breakthrough in the state of the art.

OBJECTIVES OF THE INVENTION

[0013] The main objective of the present invention is to make possible a segment of a soccer ball which may be joined to other segments to form a ball, using only the bare hands, when all the necessary segments have been collected.

[0014] Another of the objectives is to give these segments characteristics which make them useful as advertising means of consumer products.

[0015] Still another of the objectives is to provide the segments with means for joining them which fulfills the first objective and also allows the ball to be used for kicking.

[0016] Other objectives and advantages of the present invention may become apparent by studying the following description and drawings which accompany it for strictly illustrative and non-limiting purposes.

BRIEF DESCRIPTION OF THE INVENTION

[0017] Briefly, the present invention consists of a segment of a ball which is made up of a joining means, which in one of its forms, is formed by fixed elements and accessories, on the peripheral sides. These fixed elements as well as the accessories may form an integral part of the segment, or they may be, at least the accessories may be, independent of the segment of the ball.

[0018] In some variations, these elements may both be elastic or they may both be rigid, depending above all on the corresponding characteristic of the segment. In another variation the fixed element may be rigid and the accessory may be elastic.

[0019] The elements may be a projection of any shape or arrangement which allows the segment to be connected to another segment by simply sliding the fixed connecting elements of the accessory of the segment into the fixed connecting element of the adjoining segment of the ball, sliding into the free groove of the accessory connecting element.

[0020] These accessory connecting elements consist of two longitudinal grooves with a wall separating the two. These grooves will be filled by the fixed connecting elements of the adjoining segment of the ball. One of the

fixed elements slides into one of the grooves on one end and the other fixed connecting element penetrates the other groove from the other end in order to assemble the ball.

[0021] Besides these characteristics of flexibility and elasticity of the accessory connecting element, this element also consists of slits on the longitudinal half, on the sides which face the corresponding edge of the segment of the ball.

[0022] On the other hand, as was previously mentioned, between the longitudinal grooves into which the fixed connecting elements will be inserted, there is a wall which separates the fixed connecting elements of one segment of the ball and the corresponding fixed connecting element of the adjacent segment of the ball, thus achieving a kind of shock absorber for the movement and sliding of said fixed connecting elements.

[0023] The conformation of the segments may vary, and the number of elements in the connecting system may also.

[0024] In a preferred version the segments may be pentagons, but there is nothing that prevents their being circular, square, or triangular, etc. The rigid means may also have the shape of the segments of which they are a part. However, it has been seen that even this may vary and although the edge of the segment is straight, the rigid connecting means may be curved and the invention will still function.

[0025] They may also be flat or curved segments, concave or convex; they may be solid or hollow, rigid, flexible or elastic.

[0026] They may simply be the segment or they may include indentations or projections on the concave or convex surfaces, projections other than those which constitute the connecting system. These additional projections may be used to affix some product to said segment.

[0027] Obviously, between the connecting means and the segments certain combinations may be established, for example the segment may be flexible and the connecting system may consist exclusively of rigid elements, however, both may be flexible, although in one of the variations, it is assumed that at least one of them be flexible.

[0028] Likewise, when besides being flexible, the segment is hollow and elastic, this segment may be inflated in order to comply still more with the function of being functional for play.

[0029] In order to better understand the characteristics of the invention, the illustrative but non-limiting drawings which accompany the description as an integral part of the same are described.

BRIEF DESCRIPTION OF THE DRAWINGS

[0030]

Figure 1 shows an exterior view of the segment of the ball with its fixed and accessory connecting

means.

Figure 2 illustrates an exploded view a version of a ball made up of 12 pentagonal segments and the fixed connecting means for each edge.

Figure 3 illustrates the ball of figure 2, assembled with all of the connecting means in place.

Figure 4 shows one of the possibilities for the utilization of the segment of the ball as part of the top of a container.

Figure 5 illustrates a version of a segment of the ball in which only four fixed connecting means are used and the configuration of the segments is circular on its periphery.

Figure 6 illustrates a version in which the segment of the ball is hollow and makes up a top for removing from inside it the product which it contains.

Figure 7 shows by parts, a ball formed of only six segments.

Figure 8 illustrates the ball of figure 7, now assembled.

Figure 9 shows how only two segments of the ball may enclose a space in which some kinds of products may be contained.

[0031] Following is a detailed description of some of the modalities of the same, shown in the drawings annexed to the present description for illustrative but non-limiting purposes.

DETAILED DESCRIPTION OF THE INVENTION

[0032] The characteristic details of this novel item, called segment of a ball, will be shown through the detailed description of the version illustrated in the attached drawings, the same parts referred to by the same reference signs in the description and in the drawings.

[0033] Figure 1 shows an exterior view of segment 1 with its connecting means conformed of fixed elements 2 on the segment and accessory elements 3. In order to facilitate the insertion of fixed connecting element 2 to accessory elements 3, said accessory connecting elements 3 have a slit to ease the deformation of said elements and to allow the insertion of fixed connecting elements 2 in grooves 5 of said accessory elements.

[0034] The fixed connecting element of the ball consists of a notch or stop 6 that the accessory element abuts and which does not allow said accessory element to reach corner 7 and which makes it difficult for deformation to take place in the connecting elements when they assemble and to deform when the ball is hit during play.

[0035] This connecting element affixed to the segment of the ball is parallel to the edge of said segment of the ball, connecting only one of the ends. As can be observed, all these connecting elements which are affixed to the segment of the ball have a free edge on the same side, that is, they all point in the same direction, either clockwise or counterclockwise, but all in the same direction. This is to insure that upon assembling the ball, the correct coupling is achieved.

[0036] It was proved that only three possibilities were practically acceptable for carrying out the invention. One of the possibilities is that the fixed connecting means is rigid and the accessory connecting means is flexible, another that both elements are flexible and the third that the fixed element is flexible and the accessory element is rigid.

[0037] There are also certain modalities in relation to the fixed connecting means and the accessory connecting means. In one of these modalities, the accessory fixing means forms part of the segment of the ball with an appropriate material in order to achieve flexibility when necessary.

[0038] Figure 2 illustrates an exploded view of a version of a ball made up of 12 pentagonal segments 1 and fixed connecting means 2, one on each edge. In this connecting version for the segments of the ball, each of 11 segments coincides with the photograph of each of the 11 players of the team and the twelfth segment has the emblem of the team or the flag of the country the team represents.

[0039] As can be observed, the elements which are presented are the same as those described in figure 1, multiplied to give the ball 12 segments, with their respective 5 fixed connecting elements on the edges of the segments and the appropriate number of accessory connecting elements to join the 12 segments and form the ball.

[0040] Figure 3 illustrates the ball of figure 2, assembled with all the connecting means in place. This figure shows the form the ball will take when completely assembled. Depending on the modalities, when a ball of the version in which the segments and fixed connecting elements are rigid is kicked, the accessory connecting elements are bent and return to their original form and dimension making the ball bounce correctly.

[0041] As can be observed in the figures, the rigid connecting elements are inserted into the longitudinal grooves of the accessory connecting element. With the presence of a wall between each groove, said grooves are tightly wrapped around the corresponding fixed connecting element and there is no direct contact between the fixed connecting elements of one of the segments and the corresponding fixed connecting element of the adjacent segment of the ball.

[0042] Good sliding and deforming working is obtained with this tight wrapping and the separation between the fixed connecting elements which allow the adequate assembly and functioning of the ball during, for example, a soccer match.

[0043] Figure 4 shows one of the possibilities of using the segment of the ball, as part of or as a top 41 for a container 40. In this promotion the segment of the ball may be in the version in which the accessory connecting element is part of a single piece of the segment of the ball together with the fixed connecting element.

[0044] Figure 5 illustrates a version of segment 1 of the ball in which there are only four fixed connecting means 2 and the configuration of the segments is circular. In order to facilitate the insertion of the accessory connecting element into the fixed connecting element 2, the edge of the segment has a diagonal slit 50.

[0045] Figure 6 illustrates a version in which segment 1 of the ball is hollow and makes up the top 60 which will be removed in order to remove the product from the container. In this version, the top may be smaller in order to reduce the amount of material used for manufacturing the segment and in order to change the aspect of the segment. The hollowness of the segment may be included in the fixed connecting elements.

[0046] Figure 7 shows a ball formed by only six segments in pieces. In the shape of a cube with convex sides, the segments of the ball with four fixed connecting elements may connect to form a ball which is more or less spherical.

[0047] Figure 8 illustrates the ball of figure 7, now assembled. As can be observed, the inconvenience of a ball formed by only 6 segments is that it leaves gaps 80 between the edges and thus this ball cannot be used for containing products of small dimensions. However, it can be observed that technically this version of segment of a ball is feasible.

[0048] Figure 9 shows how only two segments of a ball can enclose a space in which some types of products may be placed. This would be the minimum number of segments for a ball which could have a commercial product contained within the space formed by joining two segments.

[0049] Although this illustrated formation of two segments of a ball is the one which utilized segments of four fixed connecting elements, it is completely possible to join two segments of a ball of pentagonal or any other configuration.

[0050] As had been mentioned earlier, said segments may present distinct modalities as far as the consistency of the segments of the ball is concerned. They may be hollow or solid, flexible or rigid and elastic. They may even be segments which may be inflated in order to improve the performance of the bouncing of the ball.

[0051] If hollow, these segments may be filled with some consumer product and marketed as a container for said products, and if an opaque or non-transparent bag is used, it is possible to generate uncertainty when purchasing the product, making it necessary to exchange segments in order to collect all of the segments printed with figures or photographs of the players of a certain team.

[0052] The invention has been sufficiently described

so that a person with general knowledge in the field may reproduce and obtain the results mentioned in the present invention. However, any person with knowledge in the state of the art of the present invention may make modifications not described in the present application, however, if for the application of these modifications of a determined structure or for the process of manufacturing the same, the material claimed in the following claims is required, said structures shall be considered within the scope of the invention.

Claims

1. Segment of a ball and connecting elements for forming a functional soccer ball, **characterized by** consisting of a connecting system made up of a connecting element affixed to the segment of the ball and an accessory connecting element; the fixed connecting element consisting of a projection at a tangential cut to the edge of the segment of the ball and at the end another longer projection parallel to the edge, a space being left between the outer edge of the segment and the inner face of the parallel projection. 25
2. Segment of a ball and connecting elements for forming a functional soccer ball, as described in the previous claim, also **characterized by** there being a combination chosen between the set of the flexible fixed connecting element and flexible accessory connecting element; rigid fixed connecting element and flexible accessory connecting element. 30
3. Segment of a ball and connecting elements for forming a functional soccer ball, as described in the previous claim, also **characterized by** the accessory connecting element and the fixed connecting element forming an integral body. 35 40
4. Segment of a ball and connecting elements for forming a functional soccer ball, as described in claims 1 to 3, also **characterized by** the segment being hollow, rigid, flexible, convex or a combination of these. 45
5. Segment of a ball and connecting elements for forming a functional soccer ball, as described in any of claims 1 to 4, also **characterized by** the segment having a closing means which allows for removing the contents which is in side. 50
6. Segment of a ball and connecting elements for forming a functional soccer ball, as described in any of claims 1 to 5, also **characterized by** the segment of the ball having an impression on its outer face. 55
7. Segment of a ball and connecting elements for form-

ing a functional soccer ball, as described in any of claims 1 to 6, also **characterized by** the number of fixed connecting elements varying from 3 to 7.

8. Segment of a ball and connecting elements for forming a functional soccer ball, as described in any of claims 1 to 7, also **characterized by** various of these segments being joined by the insertion of the fixed connecting elements into the longitudinal grooves of the accessory connecting elements, the fixed connecting element of one of the segments being in one of the longitudinal grooves of the accessory connecting element, and in the other longitudinal groove of said accessory connecting element there being the fixed connecting element of the adjacent segment of the ball. 10 15 20
9. Segment of a ball and connecting elements for forming a functional soccer ball, as described in any of claims 1 to 8, also **characterized by** there being between the longitudinal grooves of the accessory connecting element a wall which separates the two grooves. 25

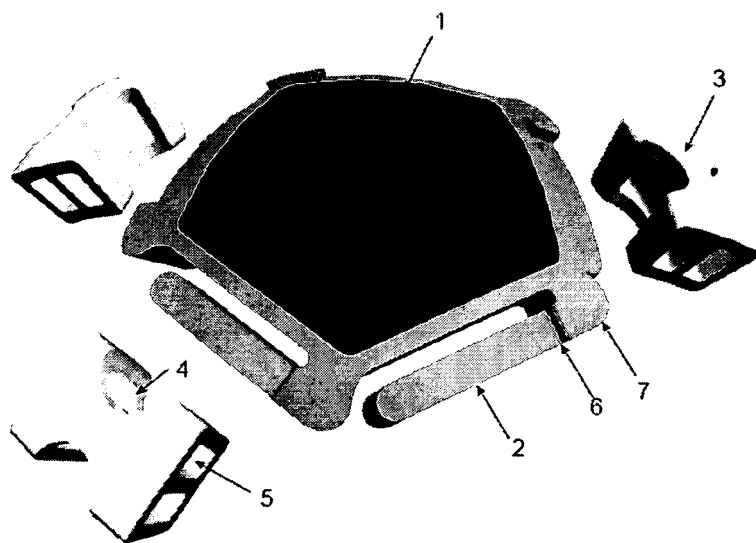


Fig.1



Fig. 2

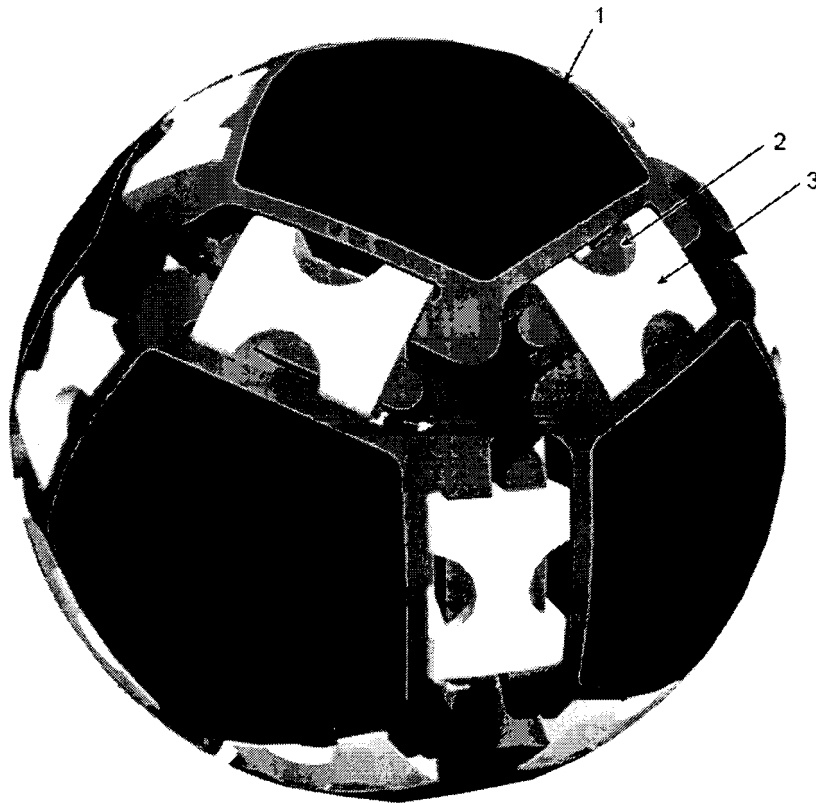


Fig. 3

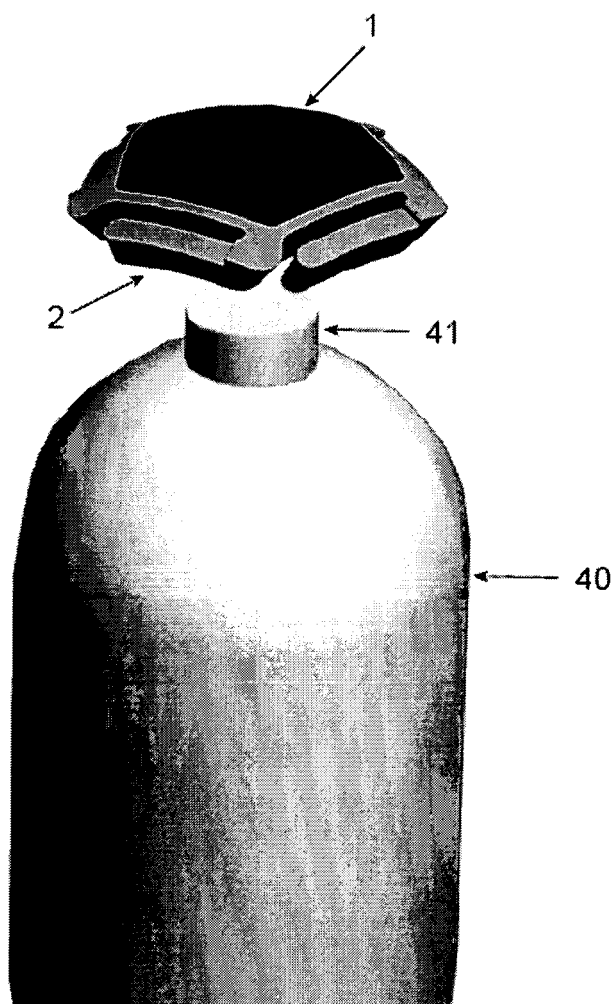


Fig. 4

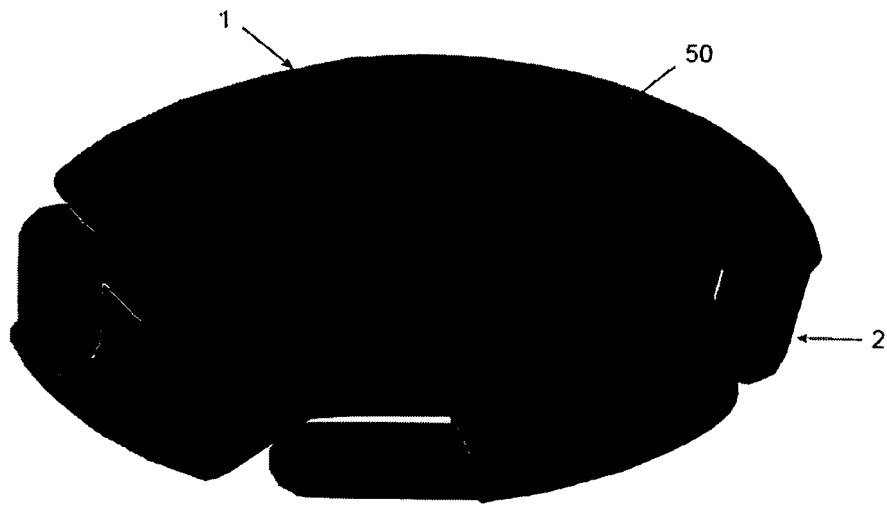


Fig. 5

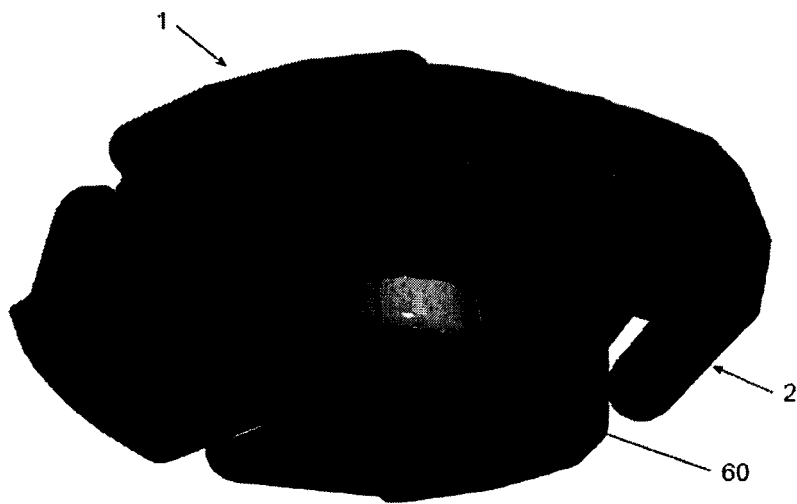


Fig. 6

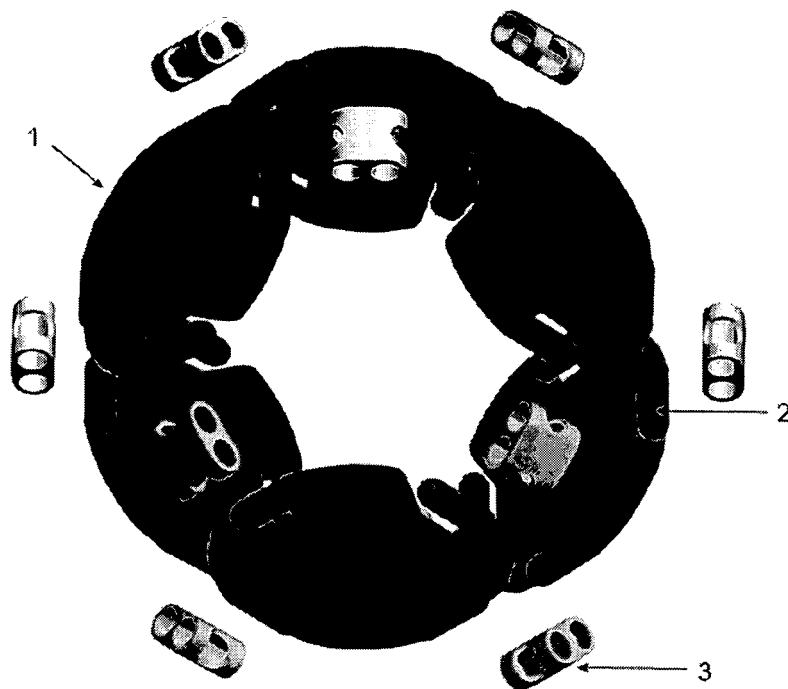


Fig. 7

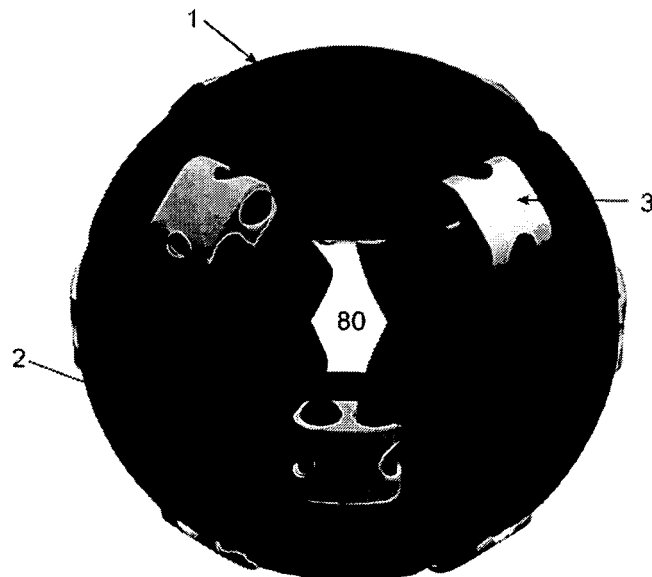


Fig. 8

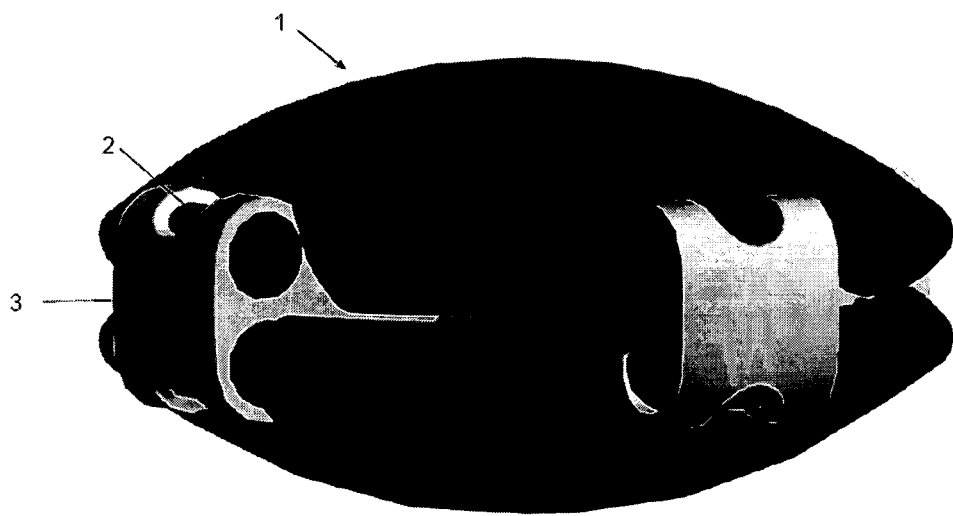


Fig. 9

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ MX 2006/000096

A. CLASSIFICATION OF SUBJECT MATTER

see extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A63F 9/+, A63H 33/+, A63B 39/+, A63B 45/00, G09F 23/+, G09F 19/+, A63B 41/+

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CIBEPAT,EPODOC,WPI,PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance.		
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"P" document published prior to the international filing date but later than the priority date claimed		
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Date of the actual completion of the international search

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Date of mailing of the international search report

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Name and mailing address of the ISA/
O.E.P.M.Paseo de la Castellana, 75 28071 Madrid, España.
Facsimile No. 34 91 3495304

Authorized officer

L.Mª Iglesias Gómez

Telephone No. +34 91 349 8413

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/MX 2006/000096

C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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International application No.

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INTERNATIONAL SEARCH REPORT

International application No.

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CLASSIFICATION OF SUBJECT MATTER

A63F 9/12 (2006.01)

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REFERENCES CITED IN THE DESCRIPTION

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