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TOY WATER BALL

Abstract

A toy water ball includes a plurality of petals each having a first edge portion and a second edge portion. Each first edge portion is provided with first magnetic members, and each second edge portion is provided with second magnetic members. When all petals are closed to form a spherical shape, an attraction force is generated between the first magnetic members of each petal and the second magnetic members of the adjacent petal so that the first edge portion of the petal tightly fit the second edge portion of the adjacent petal and a water-carrying cavity is formed. The toy water ball can be closed or opened repeatedly and can be reused. Thus, it is environmentally friendly and clean. Furthermore, the toy water ball can be filled with water in a common water source without a specific pressure, so it can be used in many occasions, and has strong applicability.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATIONS [0001] The present application is continuation of co-pending U.S. patent application Ser. No. 17/549,920, filed Dec. 14, 2021, which claims priority to Chinese Patent Application No. 202011567478.4, filed on Dec. 25, 2020, entitled “TOY WATER BALL.” The entire contents of the above-identified applications are hereby incorporated by reference.

FIELD

[0002] The invention relates to the field of entertainment toys, in particular to a toy water ball.

BACKGROUND

[0003] As the weather gets hotter, toys that use water as the medium are more popular and people can play with them, for example, water guns, and feel cooling. However, water guns have high risk of hurting people, especially in the eyes, due to the high pressure of water jetted. At present, there is a game of throwing a water ball, in which a balloon filled with water is thrown at a player. The player who is hit will get wet by the water due to the balloon burst. The player will try to avoid the flying water ball as much as possible. This game is safe and can bring great fun and coolness for people, so it is really a good activity for people to play in summer.

[0004] However, the balloons used in the current water ball activities can only be used once and can't be reused after bursting. The large number of used balloons is likely to cause environmental pollution. In addition, to play with this water ball, water needs to be injected into the balloons under pressure, so this game often requires an environment with a water tap. Many people like to play it in places with water such as grassland, seaside or riverside in the suburbs. However, under normal atmospheric pressure, it is difficult to directly inject water into balloons to expand them. Therefore, it is difficult to inject water to sufficiently expand the water ball on the spot due to the lack of water pressure in the natural environment. As a result, this game is limited by an environment.

SUMMARY

[0005] Based on various embodiments of the present application, a toy water ball that can be reused and can be used in many occasions is provided.

[0006] A toy water ball, comprising a plurality of petals, wherein each of the petals comprises a first edge portion and a second edge portion, each of the first edge portions is provided with at least one first magnetic member, and each of the second edge portions is provided with at least one second magnetic member; when the petals are closed to form a spherical shape, an attraction force is generated between the first magnetic members on the first edge portion of each of the petals and the second magnetic members on the second edge portion of an adjacent petal so that the first edge portion of the petal tightly fits with the second edge portion of the adjacent petal and the petals cooperatively form a water-carrying cavity therebetween.

[0007] The beneficial effects of the invention are as follows.

[0008] The toy water ball of the invention is provided with the first magnetic members and the second magnetic members, so that the toy water ball can be folded or opened repeatedly and thus can be reused; therefore, the water ball is environmentally friendly and clean. In addition, the toy

water ball can be filled with water in a common water source without a specific pressure, so it can be used in many occasions, and has strong applicability.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. **1** is a perspective schematic view of a toy water ball according to a first embodiment of the invention;

[0010] FIG. **2** is a perspective schematic view of the toy water ball of FIG. **1** in an unfolded state;

[0011] FIG. **3** is a perspective schematic view of the toy water ball of FIG. **1**, viewed from another aspect;

[0012] FIG. **4** is a perspective schematic view of the toy water ball of FIG. **3** in an unfolded state;

[0013] FIG. **5** is a perspective schematic view of one of the petals of the toy water ball of FIG. **2** tilted;

[0014] FIG. **6** is a perspective schematic view of a petal of FIG. **5** cut along the midline, in which first magnetic members and the petal are in an exploded state;

[0015] FIG. **7** is a perspective schematic view of a connecting member of the toy water ball of FIG. **1**;

[0016] FIG. **8** is a perspective schematic view of a toy water ball according to a second embodiment;

[0017] FIG. **9** is a perspective schematic view of a toy water ball according to a third embodiment;

[0018] FIG. **10** is a perspective schematic view of a toy water ball according to a fourth embodiment;

[0019] FIG. **11** is a perspective schematic view of a toy water ball according to a fifth embodiment;

[0020] FIG. **12** is a perspective schematic view of the toy water ball of FIG. **11** in an opened state;

[0021] FIG. **13** shows a connecting member of the toy water ball of FIG. **12** and a first edge portion and a second edge portion of each of the petals;

[0022] FIG. **14** is a perspective schematic view of a toy water ball according to a sixth embodiment; and

[0023] FIG. **15** is a perspective schematic view of the toy water ball of FIG. **14** in an opened state.

DESCRIPTION OF THE EMBODIMENTS

[0024] For easy understanding of the invention, a more comprehensive description of the invention will be given below. However, the invention may be implemented in many different forms and is not limited to the embodiments described herein. On the contrary, these embodiments are provided to make the contents disclosed by the invention understood more thoroughly and comprehensively.

[0025] Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by those skilled in the technical field to which the invention belongs. The terms used herein in the specification of the invention are for the purpose of describing specific embodiments only but not intended to limit the invention.

[0026] Referring to FIGS. **1** to **7**, a toy water ball of a first embodiment of the invention can be thrown as a prop in games and entertainment. The toy water ball has a folded state and an unfolded state. When the toy water ball is placed into water and filled with water, and after the water ball returns to a combined state, the toy water ball forms a closed water-carrying cavity. When the toy water ball hits a person or hits the ground or a hard object during the game, the toy water ball is squeezed or compressed to split and turns to the unfolded state, and the loaded or carried water splashes to achieve the purpose of the game and entertainment.

[0027] Specifically, as shown in FIGS. **1** to **4**, the toy water ball **100** according to the first embodiment of the invention includes a plurality of petals **10**, and each of the petals **10** has a first edge portion **11** and a second edge portion **12**; each of the first edge portions **11** is provided with a

first magnetic member **21**, and each of the second edge portions **12** is provided with a second magnetic member **22**. When all the petals **10** are folded and closed to form a spherical shape, the first magnetic member **21** on the first edge portion **11** of each of the petals **10** and the second magnetic member **22** on the second edge portion **12** of the adjacent petal **10** attract each other so that the first edge portion **11** of the petal **10** tightly fits with the second edge portion **12** of the adjacent petal **10**, and in this way, every two adjacent petals **10** are connected and fit together in sequence, and all the petals **10** together form a water-carrying cavity.

[0028] In this embodiment, the toy water ball **100** has three petals **10**, and each of the petals **10** is configured as a one-third-sphere shell. When in the combined state, the three petals **10** are close to each other in pairs and fit together to cooperatively form the water-carrying cavity enclosed by the three petals **10**. In this embodiment, the toy water ball **100** is configured in a spherical shape. Understandably, in other embodiments, the toy water ball can also be shaped like an elliptical sphere or an irregular sphere, as long as it can carry water in the folded state. In this embodiment, the three petals **10** are of the same shape to facilitate mass production. In other embodiments, the three petals **10** can be different in size, as long as they can be arranged in a circle and fold up to form a sphere.

[0029] In this embodiment, each of the petals **10** is configured as an arc-shaped fan-like shell. Each of the petals **10** is integrally made of a soft material. In this way, people feel less pain when hit by the toy water ball, thus increasing the fun of entertainment. Specifically, each of the petals **10** is made of a light, thin, flexible and soft sheet such as a silicone sheet, and is somewhat elastic. In other embodiments, the first edge portion **11** and the second edge portion **12** of each of the petals **10** can be made of a different material separately and then integrally assembled together, for example, the first edge portion **11** and the second edge portion **12** are made of silicone, soft gel, the body/middle portion of the petal **10** is configured as a soft shell, and the three are connected to form an integral member by injection molding.

[0030] Referring to FIGS. **5** and **6**, the first edge portion **11** and the second edge portion **12** of each of the petals **10** are located on opposite sides of the petal **10**. In this embodiment, the first edge portion **10** of one of the petals **10** of the toy water ball **100** is provided with a plurality of first magnetic members **21**, the second edge portion **12** of the petal **10** adjacent to the first edge portion **11** of the one of the petals **10** is provided with a plurality of second magnetic members **22**, and the positions of the first magnetic members **21** of the one of the petals **10** are arranged in one-to-one correspondence with the positions of the second magnetic members **22** of the adjacent petal **10**. Specifically, in this embodiment, the number of the first magnetic members **21** and the number of the second magnetic members **22** of each of the petals **10** are both five, and the positions of the first magnetic members **21** are arranged in one-to-one correspondence with the positions of the second magnetic members **22** so that the magnetic attraction force therebetween is maximized with a relatively light weight. Specifically, the first magnetic members **21** of the first edge portion **11** of the same petal **10** are spaced apart from each other, and the second magnetic members **22** of the second edge portion **12** of the same petal **10** are spaced apart from each other. In other embodiments, the number of the first magnetic members **21** or the second magnetic members **22** of the same petal **10** can be determined according to the size of the toy water ball **100** and the size of the first magnetic member **21** or the second magnetic member **22**. The number of the first magnetic members **21** or the second magnetic members **22** can also be one. For example, one elongated first magnetic member and one elongated second magnetic member are applied for one petal. In a case where the plurality of first magnetic members **21** or the plurality of second magnetic members **22** are spaced apart, the weight of the toy water ball **100** associated with the first magnetic members **21** or the second magnetic members **22** can be reduced while a sufficient magnetic attraction force is ensured, and the lightness and entertainment interest of the toy water ball **100** can be improved.

[0031] In this embodiment, the first edge portion **11** of each of the petals **10** has a first fitting surface **31**, and the first magnetic members **21** are mounted on an inner side of the first edge

portion **11**, the inner side facing away from the first fitting surface **31**; the second edge portion **12** of each of the petals **10** has a second fitting surface **32**, and the second magnetic members **22** are mounted on an inner side of the second edge portion **12**, the inner side facing away from the second fitting surface **32**.

[0032] The first fitting surface **31** and the second fitting surface **32** are both concavely arranged in a natural state and are prone to deformation when squeezed. When the first fitting surface **31** is fit on the corresponding second fitting surface **32** of the adjacent petal **10**, under the action of magnetic attraction, the first fitting surface **31** and the second fitting surface **32** are deformed into a tight fit to form a sealed water-retaining layer to prevent the water loaded in the toy water ball **100** from leaking out in advance. Specifically, the first fitting surface **31** or the corresponding second fitting surface **32** of the adjacent petal **10** has an inclined surface leaning toward each other. Understandably, in other embodiments, the first fitting surface **31** or the second fitting surface **32** may be provided with a flat surface, as long as the sealed and water-retaining effect can be achieved when they are close to each other and fit together under the action of magnetic attraction.

[0033] Preferably, the first magnetic members **21** are arranged corresponding to a middle position of the first fitting surface **31**, i.e., the midline between inner and outer edges of the first fitting surface **31**. The inner edge of the first fitting surface **31** is close to the water-carrying cavity and the outer edge of the first fitting surface **31** is away from the water-carrying cavity. The second magnetic members **22** are arranged corresponding to a middle position of the second fitting surface **31**. Specifically, the first magnetic members **21** are mounted and fixed inside the first edge portion **11** to avoid affecting the waterproof effect of the first fitting surface **31**; similarly, the second magnetic members **22** are mounted and fixed inside the second edge portion **12** to avoid affecting the waterproof effect of the second fitting surface **32**.

[0034] In this embodiment, an inner side of the first edge portion **11** of each of the petals **10** is provided with a first groove **41**, and the first magnetic members **11** [sic] are fixed in the first groove **41**. The first magnetic members **21** are fixed on the first edge portion **11** by binding/adhering/bonding. An inner side of the second edge portion **12** of each of the petals **10** is provided with a second groove (not shown), and the second magnetic members **22** are fixed in the first grooves [sic]. The second magnetic members **22** are fixed on the second edge portion **12** by binding/adhering/bonding. Understandably, in other embodiments, the first magnetic members **21** may also be fixed on the first edge portion **11** by means of snap connection, integral molding, or the like; the second magnetic members **22** may also be fixed on the second edge portion **12** by means of snap connection, integral molding, or the like.

[0035] In this embodiment, the first magnetic members **21** and the second magnetic members **22** are both magnets, and both shaped like rectangular blocks. The first magnetic members **21** of the first edge portion **11** and the second magnetic members **22** of the adjacent second edge portion **12** are opposite in polarity to achieve the effect of attracting each other when approaching. In other embodiments, the first magnetic members **21** are magnets and the second magnetic members **22** are iron blocks, or the first magnetic members **21** are iron blocks and the second magnetic members **22** are magnets, which can also achieve a mutual magnetic attraction effect.

[0036] Referring also to FIG. **7**, the toy water ball **100** further includes a connecting member **50** that connects each of the petals **10** respectively. The connecting member **50** includes an elastic connecting ring **51** and connecting ends **52** respectively connecting the connecting ring **51** to each of the petals **10**. The connecting end **52** is connected to the same end of each of the petals **10**. After each of the petals **10** is connected by the connecting member **50**, when the toy water ball **100** is thrown out and hits a person or falls on the ground and splits open, each of the petals **10** can be well connected, and there is no need to pick the petals up one by one. Understandably, in some embodiments, the connecting ring **51** can be configured as a common inelastic rope. In addition, in embodiments where few petals **10** are provided, the connecting member **50** can be omitted. For example, in the case of three petals **10** in this embodiment or in the case of two petals **10** in other

embodiments, without the connecting member **50**, the toy water ball still can be used normally.
[0037] In use of the toy water ball **100**, a player can hold or grip the toy water ball **100** and put it directly into a water source, for example, in water in a bucket, river, or sea, and then squeeze the toy water ball **100** hard to deform the petals **10** to a certain extent, so that a gap is formed between two adjacent petals **10** to allow water inflow. After water flows into the toy water ball **100**, the player unlooses the toy water ball **100**, the first edge portion **11** and the second edge portion **12** of the adjacent petals **10** come into a tight fit by virtue of the magnetic attraction between the first magnetic members **21** and the second magnetic members **22**, thus achieving the sealed waterproof effect. When the toy water ball **100** fully filled with water is thrown out and hits a person or an object, the adjacent petals **10** are forced to depart from each other, the toy water ball **100** splits open, and the water in the toy water ball **100** splashes out to achieve the game effect.
[0038] Compared with an existing water balloon, the toy water ball of the invention is provided with the first magnetic members and the second magnetic members, so that the toy water ball can be folded or opened repeatedly and thus can be reused; therefore, the water ball is environmentally friendly and clean. In addition, the toy water ball can be filled with water in a common water source without a specific pressure, so it can be used in many occasions, and has strong applicability.
[0039] Referring to FIG. **8**, a toy water ball **100***a* according to a second embodiment of the invention is illustrated. The toy water ball **100***a* includes a plurality of petals **10***a*, and each of the petals **10***a* has a first edge portion **11***a* and a second edge portion **12***a;* each of the first edge portions **11***a* is provided with first magnetic members (not shown), and each of the second edge portions **12***a* is provided with second magnetic members (not shown). The toy water ball **100***a* of the second embodiment is similar to the toy water ball **100** of the first embodiment except that the number of the petals **10***a* in the toy water ball **100***a* of the second embodiment is two, and each of the petals **10***a* is configured as a hemispherical shell. The toy water ball **100***a* further includes a connecting member **50***a* respectively connected to each of the petals **10***a*.
[0040] Referring to FIG. **9**, a toy water ball **100***b* according to a third embodiment of the invention is illustrated. The toy water ball **100***b* includes a plurality of petals **10***b*, and each of the petals **10***b* has a first edge portion **11***b* and a second edge portion **12***b;* each of the first edge portions **11***b* is provided with first magnetic members (not shown), and each of the second edge portions **12***b* is provided with second magnetic members (not shown). The toy water ball **100***b* of the third embodiment is similar to the toy water ball **100** of the first embodiment except that the toy water ball **100***b* of the third embodiment has four petals **10***b*, and each of the petals **10***b* is configured as a one-fourth-sphere shell. The toy water ball **100***b* further includes a connecting member **50***b* respectively connected to the petals **10***b*.
[0041] Referring to FIG. **10**, illustrated is a toy water ball **100***c* according to a fourth embodiment of the invention. The toy water ball **100***c* includes a plurality of petals **10***c*, and each of the petals **10***c* has a first edge portion **11***c* and a second edge portion **12***c;* each of the first edge portions **11***c* is provided with first magnetic members (not shown), and each of the second edge portions **12***c* is provided with second magnetic members (not shown). The toy water ball **100***c* of the fourth embodiment is similar to the toy water ball **100** of the first embodiment except that the toy water ball **100***c* of the fourth embodiment has five petals **10***c*, and each of the petals **10***c* is configured as a one-fifth-sphere shell. The toy water ball **100***c* further includes a connecting member **50***c* respectively connected to the petals **10***c*.
[0042] Referring to FIGS. **11** to **13**, illustrated is a toy water ball **100***d* according to a fifth embodiment of the invention. The toy water ball **100***d* includes a plurality of petals **10***d*, and each petal **10***d* has a first edge portion **11***d* and a second edge portion **12***d;* each first edge portion **11***d* is provided with first magnetic members (as shown in FIG. **13**), and each second edge portion **12***d* is provided with second magnetic members (shown in FIG. **13**). The toy water ball **100***d* of the fifth embodiment is similar to the toy water ball **100***a* of the second embodiment except that the toy

water ball **100***d* of the fifth embodiment further includes a connecting member **50***d* respectively connected to the petals **10***d* and the connecting member **50***d* is configured as a sheet. In this embodiment, the connecting member **50***d* is integrally formed with the first edge portion **11***d* and the second edge portion **12***d* of each petal **10***d,* and then is connected to a main body of each petal **10***d.* In this embodiment, an outer surface of each petal **10***d* is provided with a wave-like pattern.
[0043] Referring to FIGS. **14** and **15**, illustrated is a toy water ball **100***e* according to a sixth embodiment of the invention. The toy water ball **100***e* includes a plurality of petals **10***e,* and each petal **10***e* has a first edge portion **11***e* and a second edge portion **12***e;* each first edge portion **11***e* is provided with first magnetic members (not shown), and each second edge portion **12***e* is provided with second magnetic members (not shown). The toy water ball **100***e* of the sixth embodiment is similar to the toy water ball **100** of the first embodiment except that the toy water ball **100***e* of the sixth embodiment further includes a connecting member **50***e* respectively connected to the petals **10***e* and the connecting member **50***e* is configured as a sheet. In this embodiment, the connecting member **50***e* is integrally formed with the first edge portion **11***e* and the second edge portion **12***e* of each petal **10***e,* and then is connected to the main body of each petal **10***e.* In this embodiment, an outer surface of each petal **10***e* is provided with a wave-like pattern.
[0044] Understandably, the toy water ball of the invention is not limited to being filled with water, and the toy water ball of the invention can be used to be filled with other liquids suitable for people's entertainment, such as beer, milk or other liquids harmless to the human body or drinkable.
[0045] The above-described embodiments only show several implementations of the invention, which are more specific and detailed, but not to be construed as limiting the patent scope of the invention. It should be noted that those of ordinary skill in the art may further make variations and improvements without departing from the conception of the invention, and these all fall within the protection scope of the invention. Therefore, the patent protection scope of the invention should be subject to the appended claims.

Claims

1-20. (canceled)
21. A toy water ball, comprising: a first petal comprising an elastic silicone material, the first petal including a silicone sheet configured as a first hemispherical shell, a first edge portion having a first fitting surface, and a plurality of first magnetic members mounted and fixed inside the first edge portion away from the first fitting surface; and a second petal comprising an elastic silicone material, the second petal including a silicone sheet configured as a second hemispherical shell, a second edge portion having a second fitting surface, and a plurality of second magnetic members mounted and fixed inside the second edge portion away from the second fitting surface, wherein the first fitting surface is shaped to fit and contact the second fitting surface; a connecting member connecting the first petal to the second petal, wherein the plurality of first magnetic members are spaced apart from each other, and the plurality of second magnetic members are spaced apart from each other, wherein the plurality of first magnetic members mate with the plurality of second magnetic members to position the first petal and the second petal in a closed state and define a water-carrying cavity, wherein a magnetic attraction force between the plurality of first magnetic members and the plurality of second magnetic members is sufficient to cause the first edge portion and the second edge portion to contact each other and create a water tight seal.
22. The toy water ball of claim 21, wherein the connecting member is configured as a sheet.
23. The toy water ball of claim 21, wherein the connecting member is integrally formed with the first edge portion and the second edge portion.
24. The toy water ball of claim 21, wherein the first fitting surface and the second fitting surface deform into a tight fit.
25. The toy water ball of claim 21, wherein the first hemispherical shell of the first petal is

integrally formed with the first edge portion.
26. They toy water ball of claim 25, wherein the second hemispherical shell of the second petal is integrally formed with the second edge portion.
27. The toy water ball of claim 21, wherein each of the plurality of first magnetic members is shaped as a rectangular block, and each of the plurality of second magnetic members is shaped as a rectangular block.
28. The toy water ball of claim 27, wherein the each of the plurality of first magnetic members is fixed in the first edge portion by integrally molding each first magnetic member in the first edge portion.
29. The toy water ball of claim 28, wherein the each of the plurality of second magnetic members is fixed in the second edge portion by integrally molding each second magnetic member in the second edge portion.
30. The toy water ball of claim 21, wherein the first fitting surface comprises a slope and the second fitting surface comprises a slope; and wherein the slope of the first fitting surface and the slope of the second fitting surface are tilted to each other.
31. A toy water ball, comprising: a first petal comprising an elastic silicone material, the first petal including a silicone sheet configured as a first hemispherical shell, a first edge portion having a first fitting surface, and a plurality of first magnetic members mounted and fixed inside the first edge portion away from the first fitting surface; and a second petal comprising an elastic silicone material, the second petal including a silicone sheet configured as a second hemispherical shell, a second edge portion having a first fitting surface, and a plurality of second magnetic members mounted and fixed inside the second edge portion away from the second fitting surface, wherein the first fitting surface is shaped to fit and contact the second fitting surface; wherein the plurality of first magnetic members are spaced apart from each other, and the plurality of second magnetic members are spaced apart from each other, wherein the plurality of first magnetic members are positioned to mate with the plurality of second magnetic members to hold the first petal and the second petal in a closed state and define a water-carrying cavity, wherein the magnetic attraction force between the plurality of first magnetic members and the plurality of second magnetic members is sufficient to cause the first edge portion and the second edge portion to contact each other and create a water tight seal.
32. The toy water ball of claim 31, further comprising a connecting member connecting the first petal to the second petal.
33. The toy water ball of claim 32, wherein the connecting member is configured as a sheet.
34. The toy water ball of claim 32, wherein the connecting member is integrally formed with the first edge portion and the second edge portion.
35. The toy water ball of claim 31, wherein the first fitting surface and the second fitting surface deform into a tight fit.
36. The toy water ball of claim 31, wherein the first hemispherical shell of the first petal is integrally formed with the first edge portion.
37. They toy water ball of claim 36, wherein the second hemispherical shell of the second petal is integrally formed with the second edge portion.
38. The toy water ball of claim 37, wherein each of the plurality of first magnetic members is shaped as a rectangular block, and each of the plurality of second magnetic members is shaped as a rectangular block.
39. The toy water ball of claim 31, wherein the each of the plurality of first magnetic members is fixed in the first edge portion by integrally molding each first magnetic member in the first edge portion, and wherein the each of the plurality of second magnetic members is fixed in the second edge portion by integrally molding each second magnetic member in the second edge portion.
40. The toy water ball of claim 31, wherein the first fitting surface comprises a slope and the

second fitting surface comprises a slope; and wherein the slope of the first fitting surface and the slope of the second fitting surface are tilted to each other.