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(54) **ASSEMBLED TOY**

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to an assembly toy.

2. Description of the Related Art

[0002] An assembly toy, such as a plastic model, consists of sections including, in a case of, for example, a doll, a head section, a body section, arm sections and leg sections, which are assembled by fitting together. Each of these sections, e.g., the head section and the body section, is formed into a desired three-dimensional shape by joining, for example, two molded members to each other in a mutually facing manner. The molded members are molded into desirable shape.

[0003] In this case, a projection (hereafter, referred to as a first projection and a second projection) is formed on each of the surfaces of the molded members on the side on which the molded members face each other. A distal end of the first projection is inserted in a hole provided at a distal end of the second projection at the time of assembly of the molded members. The first projection and the second projection function as knock pins.

[0004] A shape of the first projection along a section on a surface perpendicular to the projection (hereafter, simply referred to as a cross-sectional shape in some cases) is a circle. A cross-sectional shape of the hole of the second projection corresponds to the shape of the cross-sectional shape of the first projection, i.e., a circle. A plurality of pairs (for example, two or four pairs) of these projections constituted by the first projection and the second projection are provided in each section.

[0005] By the first projection and the second projection which are mutually fit together, the molded members may be disposed in an accurately positioned manner and the molded members may be fixed temporarily to each other (for example, see Japanese Unexamined Patent Application Publication No. 2008-173243.)

[0006] However, the first projection and the second projection of the thus-configured assembly toy have configurations (i.e., shapes) that are simple enough to perform the functions thereof. Therefore, there has not been any design to attract the interest of a user on inner surfaces of the molded members even if the user has been attracted the shape of outer surfaces of the molded members at the time of assembly of the assembly toy.

[0007] Since the first projection is fit in the second projection in a state in which the first projection may be rotated about a central axis thereof, it has been necessary to provide a plurality of pairs (for example, two or four pairs) of projections constituted by the first projections and the second projections in each section. This regulates rotation of one molded member with respect to the other molded member. There has been a difficulty, in some cases, in providing a plurality of pairs of projections in, for example, a relatively small space.

[0008] When the user tries to join the other molded member to one molded member, there is also a problem that correct recognition of the direction of the other molded member is not easy for the user unless the user recognizes the shape of the outer surface.

[0009] As described above, the assembly toy consists of a plurality of sections which are joined together, including the head section and the body section: in each of these sections, first projections and second projections having the same configuration (i.e., shape) are used. Therefore, there has also been a problem that two molded members constituting, for example, the head section are not easily specified unless the user recognizes the shape of the outer surfaces of the molded members.

[0010] KR-A-2010 0047 107 discloses an example of an assembly toy.

SUMMARY OF THE INVENTION

[0011] The present invention provides a highly interesting and easily assemblable toy according to claim 1.

[0012] According to the present invention, a highly interesting and easily assemblable toy may be provided.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

Fig. 1 is an exploded view, seen from the front, illustrating a first embodiment of an assembly toy of the present invention;

Fig. 2 is an exploded view, seen from the back, illustrating the first embodiment of the assembly toy of the present invention;

Fig. 3 is a cross-sectional view along line III-III of Fig. 8 only illustrating a head section;

Fig. 4 is a cross-sectional view along line IV-IV of Fig. 3;

Fig. 5 is an exploded view, seen from the front, illustrating a second embodiment of the assembly toy of the present invention;

Fig. 6 is an exploded view, seen from the back, illustrating the second embodiment of the assembly toy of the present invention;

Figs. 7A to 7E are diagrams illustrating exemplary cross-sectional shapes of second projections of the second embodiment of the assembly toy of the present invention; and

Fig. 8 is a perspective view illustrating a state in which the assembly toy of the present invention has been assembled.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0014] Hereinafter, preferred embodiments related to

the present invention will be described with reference to the drawings.

First Embodiment

[0015] Fig. 8 is a perspective view illustrating a state in which an assembly toy of the present invention has been assembled. Fig. 8 illustrates a doll which is made of, for example, a resin molded material. As illustrated in Fig. 8, the doll includes a head section 10, a body section 20, a pair of arm sections 30 and 40 and a pair of leg sections 50 and 60.

[0016] The head section 10, the body section 20, the pair of arm sections 30 and 40 and the pair of leg sections 50 and 60 of the doll are manufactured separately and, at the time of assembly, the head section 10, the pair of arm sections 30 and 40 and the pair of leg sections 50 and 60 are attached (joined), for example, to the body section 20.

[0017] Each of the head section 10, the body section 20, the pair of arm sections 30 and 40 and the pair of leg sections 50 and 60 consists of, for example, a first molded member and a second molded member which are joined to each other. For example, the first molded member is illustrated on the front side and the second molded member is illustrated on the rear side of the drawing. The head section 10 consists of a first head section molded member 10a and a second head section molded member 10b which are joined to each other. The body section 20 consists of a first body section molded member 20a and a second body section molded member 20b which are joined to each other. The arm section 30 consists of a first arm section molded member 30a and a second arm section molded member 30b which are joined to each other. The arm section 40 consists of a first arm section molded member 40a and a second arm section molded member 40b which are joined to each other. The leg section 50 consists of a first leg section molded member 50a and a second leg section molded member 50b which are joined to each other. The leg section 60 consists of a first leg section molded member 60a and a second leg section molded member 60b which are joined to each other. With this configuration, a joint portion 70 of the doll illustrated in Fig. 8 is visible at substantially the center of side surfaces of the head section 10, the body section 20, the pair of arm sections 30 and 40 and the pair of leg sections 50 and 60.

[0018] Fig. 1 illustrates the head section 10 and the body section 20 of the doll. Fig. 1 is a perspective view in which a joint between the head section 10 and the body section 20 is released and, at the same time, a joint between the first head section molded member 10a and the second head section molded member 10b of the head section 10 is released and a joint between the first body section molded member 20a and the second body section molded member 20b of the body section 20 is released.

[0019] In Fig. 1, an inner surface of the second head section molded member 10b (i.e., a surface on the side on which the second head section molded member 10b is joined to the first head section molded member 10a) and an inner surface of the second body section molded member 20b (i.e., a surface on the side on which the second body section molded member 20b is joined to the first body section molded member 20a) are concave surfaces and, therefore, the thickness of the second head section molded member 10b and the second body section molded member 20b are substantially uniform. With this configuration, the second head section molded member 10b and the second body section molded member 20b may be reduced in weight and increased in the mechanical strength. An inner surface of the first head section molded member 10a (i.e., a surface on the side on which the first head section molded member 10a is joined to the second head section molded member 10b) and an inner surface of the first body section molded member 20a (i.e., a surface on the side on which the first body section molded member 20a is joined to the second body section molded member 20b) are concave surfaces and, therefore, the thickness of the first head section molded member 10a and the first body section molded member 20a are substantially uniform (see Fig. 2).

[0020] Here, as illustrated in Fig. 1, a second projection 10P is formed at substantially the center of the inner surface of the second head section molded member 10b. A distal end of the second projection 10P is oriented in the direction of the first head section molded member 10a which is to be joined to the second head section molded member 10b. The distal end of the second projection 10P projects, slightly toward the first head section molded member 10a, from a virtual plane which includes a joint portion of the second head section molded member 10b which is to be joined to the first head section molded member 10a (hereafter, referred to as a second joint surface 10n) (see Fig. 3).

[0021] Here, the second projection 10P functions as a knock pin which is inserted and fit in a first projection (which is denoted by a reference numeral 10Q and is illustrated in Fig. 2) formed on the inner surface of the first head section molded member 10a. A cross-sectional shape of the second projection 10P along a plane perpendicular to the direction in which the second projection 10P projects (hereafter, referred to as a lateral cross-sectional shape in some cases) is, for example, a star shape. The second projection 10P is formed in a tubular shape with a hole 10H formed from a distal end toward a base end.

[0022] An outer peripheral shape and an inner peripheral shape (which corresponds to a peripheral shape of the hole 10H) along a lateral cross-section of the second projection 10P are similar star shapes. The hole 10H of the second projection 10P described above is formed to reduce the weight of the second projection 10P. Therefore, the hole 10H is not necessarily formed in the second projection 10P in the present invention and, if the hole 10H is formed, the peripheral shape may be other

shapes, such as a circle. Therefore, it is only necessary that an outer peripheral shape along a lateral cross-section of the second projection 10P is, for example, the star shape.

[0023] As is illustrated in Fig. 1, a second projection 20P is formed at substantially the center of an inner surface of the second body section molded member 20b. A distal end of the second projection 20P is oriented in the direction of the first body section molded member 20a. The distal end of the second projection 20P projects, slightly toward the first body section molded member 20a, from a virtual plane which includes a joint portion of the second body section molded member 20b which is to be joined to the first body section molded member 20a (hereafter, referred to as a second joint surface 20n).

[0024] Here, the second projection 20P functions as a knock pin which is inserted and fit in a later-described first projection (which is denoted by a reference numeral 20Q and is illustrated in Fig. 2) formed on the inner surface of the first body section molded member 20a. The cross-sectional shape of the second projection 20P is, for example, a rectangle. The second projection 20P is formed in a tubular shape with a hole 20H formed from a distal end toward a base end.

[0025] An outer peripheral shape and an inner peripheral shape (which corresponds to a peripheral shape of the hole 20H) along a lateral cross-section of the second projection 20P are similar rectangular shapes. The hole 20H of the second projection 20P described above is formed to reduce the weight of the second projection 20P. Therefore, the hole 20H is not necessarily formed in the second projection 20P in the present invention and, if the hole 20H is formed, the peripheral shape may be other shapes, such as a circle. Therefore, it is only necessary that an outer peripheral shape along a lateral cross-section of the second projection 20P is, for example, the rectangular shape.

[0026] Fig. 2 is a diagram corresponding to Fig. 1 and illustrates the head section 10 and the body section 20 of the doll. Fig. 2 is a diagram seen from the side of the second head section molded member 10b and the second body section molded member 20b while Fig. 1 is a diagram seen from the side of the first head section molded member 10a and the first body section molded member 20a.

[0027] In Fig. 2, an inner surface of the first head section molded member 10a (i.e., a surface on the side on which the first head section molded member 10a is joined to the second head section molded member 10b) and an inner surface of the first body section molded member 20a (i.e., a surface on the side on which the first body section molded member 20a is joined to the second body section molded member 20b) are concave surfaces and, therefore, the thickness of the first head section molded member 10a and the first body section molded member 20a are substantially uniform. With this configuration, the first head section molded member 10a and the first body section molded member 20a may be reduced in weight and increased in mechanical strength.

[0028] Here, as illustrated in Fig. 2, a first projection 10Q is formed at substantially the center of the inner surface of the first head section molded member 10a. A distal end of the first projection 10Q is oriented in the direction of the second head section molded member 10b which is to be joined to the first head section molded member 10a. The distal end of the first projection 10Q is formed to be on substantially the same surface of a virtual plane which includes a joint portion of the first head section molded member 10a which is to be joined to the second head section molded member 10b (hereafter, referred to as a first joint surface 10m) (see Fig. 3).

[0029] The first projection 10Q lets the second projection 10P formed on the inner surface of the second head section molded member 10b function as a knock pin which is inserted and fit in the first projection 10Q. A cross-sectional shape of the first projection 10Q along a plane perpendicular to the direction in which the first projection 10Q projects (hereafter, referred to as a lateral cross-sectional shape in some cases) is, for example, a star shape. The first projection 10Q is formed in a tubular shape with a hole 10I formed from a distal end toward a base end.

[0030] An outer peripheral shape and an inner peripheral shape (which corresponds to a peripheral shape of the hole 10I) along a lateral cross-section of the first projection 10Q are similar star shapes. An outer peripheral shape along a lateral cross-section of the first projection 10Q is defined as a star shape in order to set the thickness of the first projection 10Q to be substantially uniform. Therefore, in the present invention, the outer peripheral shape of the first projection 10Q along a lateral cross-section is not necessarily a star shape but may be other shapes, such as a circle. Alternatively, only a hole 10I may be formed on the side of the inner surface of the first head section molded member 10a. That is, in the present embodiment, the outer peripheral shape in a lateral cross-section of the first projection 10Q is not particularly limited as long as a peripheral shape of the hole 10I on the side of the inner surface of the first head section molded member 10a is a star shape which corresponds to the outer peripheral shape in a lateral cross-section of the second projection 10P and the second projection 10P fits in the hole 10I.

[0031] In the present embodiment, when the first head section molded member 10a and the second head section molded member 10b are joined to each other, the second projection 10P is inserted in the hole 10I which constitutes the inner peripheral shape of the first projection 10Q and, with the fitting between the first projection 10Q and the second projection 10P, the first head section molded member 10a and the second head section molded member 10b are joined to each other while being precisely aligned with each other.

[0032] As is illustrated in Fig. 2, a first projection 20Q is formed at substantially the center of an inner surface of the first body section molded member 20a. A distal

end of the first projection 20Q is oriented in the direction of the second body section molded member 20b which is to be joined to the first body section molded member 20a. The distal end of the first projection 20Q is formed to be on substantially the same surface of a virtual plane which includes a joint portion of the first body section molded member 20a which is to be joined to the second body section molded member 20b (hereafter, referred to as a first joint surface 20m) (see Fig. 3).

[0033] The first projection 20Q lets the second projection 20P formed on the inner surface of the second body section molded member 20b function as a knock pin which is inserted and fit in the first projection 20Q. The cross-sectional shape of the first projection 20Q is, for example, a rectangle. The first projection 20P is formed in a tubular shape with a hole 20I formed from a distal end toward a base end.

[0034] An outer peripheral shape and an inner peripheral shape (which corresponds to a peripheral shape of the hole 20I) along a lateral cross-section of the first projection 20Q are similar rectangular shapes. An outer peripheral shape along a lateral cross-section of the first projection 20Q is defined as a rectangular shape in order to set the thickness of the first projection 20Q to be substantially uniform. Therefore, in the present invention, the outer peripheral shape of the first projection 20Q along a lateral cross-section is not necessarily a rectangular shape but may be other shapes, such as a circle. Alternatively, only a hole 20I may be formed on the side of the inner surface of the first body section molded member 20a. That is, in the present embodiment, the outer peripheral shape of the first projection 20Q along a lateral cross-section is not particularly limited as long as a peripheral shape of the hole 20I on the side of the inner surface of the first body section molded member 20a is a rectangular shape which corresponds to the outer peripheral shape in a lateral cross-section of the second projection 20P.

[0035] In the present embodiment, when the first body section molded member 20a and the second body section molded member 20b are joined to each other, the second projection 20P is inserted in the hole 20I which constitutes the inner peripheral shape of the first projection 20Q and, with the fitting between the first projection 20Q and the second projection 20P, the first body section molded member 20a and the second body section molded member 10b are joined to each other while being precisely aligned with each other. In the present embodiment, the shape of a fitting portion of the head section 10 is defined as a star and the shape of a fitting portion of the body section 20 is defined as a rectangle. Since each of the fitting portions has a knock pin of different shape, it is possible to easily identify the pairs of molded members by viewing the shape of the knock pin of the fitting portion. In the present embodiment, the sections may be fit in so firmly that the sections may be fixed to each other at the fitting portion or may be fit in so loosely that a joint therebetween may serve merely as a guidance of alignment between the sections.

[0036] Since the first projections 10Q and 20Q and the second projections 10P and 20P have specific cross-sectional shapes, such as a star, a correlation between the first head section molded member 10a and the second head section molded member 10b may be found easily. Since the cross-sectional shape, e.g., the star, of the first projection 10Q and the second projection 10P formed in the head section 10 is different from the cross-sectional shape, e.g., the rectangle, of the first projection 20Q and the second projection 20P formed in the body section 20, for example, a correlation between the first head section molded member 10a and the second head section molded member 10b and a correlation between the first body section molded member 20a and the second body section molded member 20b may be found easily.

[0037] Fig. 3 is a cross-sectional view along line III-III of Fig. 8 only illustrating the head section 10. Fig. 3 illustrates a state in which the distal end of the second projection 10P is inserted and fit in the hole 10I of the first projection 10Q and, thereby, the first head section molded member 10a and the second head section molded member 10b are joined to each other with a first joint surface 10m and a second joint surface 10n facing and being in contact with each other.

[0038] In this case, the second projection 10P formed on the inner surface of the second head section molded member 10b projects, at the distal end thereof, slightly further toward the first head section molded member 10a from the second joint surface 10n of the second head section molded member 10b. As described above, the first projection 10Q formed on the inner surface of the first head section formation member 10a is, at the distal end thereof, on substantially the same surface as that of the first joint surface 10m of the first head section formation member 10a. In the present invention, however, it is also possible that the first projection 10Q formed in the first head section molded member 10a is made to project, at the distal end thereof, slightly further toward the second head section molded member 10b than the first joint surface 10m and that the second projection 10P formed in the second head section formation member 10b is, at the distal end thereof, on substantially the same surface as that of the second joint surface 10n of the second head section formation member 10b. The configurations at the distal ends of the second projection 10P and the first projection 10Q are not particularly limited as long as the second projection 10P may be fit in the facing hole 10I. The same description is applicable to the first projection 20Q and the second projection 20P of the body section 20.

[0039] Fig. 4 is a cross-sectional view taken along line IV-IV of Fig. 3. In Fig. 4, the second projection 10P is formed in a tubular shape with the hole 10H formed therein. An outer peripheral shape and an inner peripheral shape (which corresponds to a peripheral shape of the hole 10H) of the second projection 10P are similar star shapes. Note that the hole 10H is not necessarily formed

in the second projection 10P and, if the hole 10H is formed, the peripheral shape may be other shapes, such as a circle. The first projection 10Q is formed in a tubular shape with the hole 10I formed therein. An outer peripheral shape and an inner peripheral shape (which corresponds to a peripheral shape of the hole) of the first projection 10Q are similar star shapes. The second projection 10P is inserted and fit in the hole 10I of the first projection 10Q. Since the second projection 10P and the first projection 10Q have polygonal cross-sectional shapes, when these projections fit each other, axial rotation of the other of the projection with respect to one of the projection is regulated. An outer peripheral shape along a cross-section of the first projection 10Q is not necessarily a star and may be other shapes, such as a circle. Although not illustrated, the same relationship is established between the first projection 20Q and the second projection 20P of the body section 20.

[0040] In the thus-configured assembly toy, the cross-sectional shapes of the first projection 10Q and the second projection 10P may be designed in various shapes so that the inner surfaces of the molded members 10a and 10b also attract the interest at the time of assembly of the toy.

[0041] In each of the sections, such as the head section 10 and the body section 20, the first molded member 10a and the second molded member 10b are precisely joined to each other by providing at least a pair of fitting portion which consists of the first projection 10Q and the second projection 10P. Since alignment may be achieved by providing at least a pair of fitting portions, it is not necessary to provide a plurality of pairs of projections in a relatively small space, whereby the space required for the assembly toy may be reduced.

[0042] When a user tries to join the molded members 10a and 10b to each other, the direction of one of the molded member with respect to the other of the molded member may be specified by the first projection 10Q and the second projection 10P.

[0043] Further, the sections in which the molded members 10a and 10b are included may be specified easily by using the cross-sectional shapes of the first projection 10Q and the second projection 10P as guides.

Second Embodiment

[0044] Figs. 5 and 6 are configuration diagrams illustrating another embodiment of the assembly toy of the present invention. Fig. 5 corresponds to Fig. 1 and Fig. 6 corresponds to Fig. 2.

[0045] In Figs. 5 and 6, configurations different from those in Figs. 1 and 2 are in first projections 10Q and 20Q and in second projections 10P and 20P. As illustrated in Fig. 5, the cross-sectional shape of the second projection 10P formed in a second head section molded member 10b is defined as a crescent and, for example, two second projections 10P are provided. The number of the second projection 10P may be one. However, if two or more fitting portions at which the first projection 10Q and the second projection 10P fit each other are provided, there are advantageous effects that a joint between the first molded member 10a and the second molded member 10b may be enhanced and that the directions of the first molded member 10a and the second molded member 10b may be easily specified by the second projection 10P and a first projection 10Q, which will be described later, at the time of joining.

[0046] Each second projection 10P includes a hole 10H formed from a distal end toward a base end. An outer peripheral shape and an inner peripheral shape (which corresponds to a peripheral shape of the hole) along a lateral cross-section of the second projection 10P are similar crescent shapes. In the present embodiment, the second projections 10P are not particularly limited as long as outer peripheral shapes along a lateral cross-section are defined as crescents as described in the first embodiment.

[0047] The number of the second projection 20P formed in the second body section molded member 20b is, for example, one. The second projection 20P includes a hole 20H formed from a distal end toward a base end. An outer peripheral shape and an inner peripheral shape (which corresponds to a peripheral shape of the hole 20H) along a lateral cross-section of the second projection 20P are the similar hexagonal shapes.

[0048] As illustrated in Fig. 6, two first projections 10Q which are formed in the first head section molded member 10a correspond to the second projections 10P which are formed in the second head section molded member 10b. A hole 10I is formed in each of the first projections 10Q from the distal end toward the base end. An outer peripheral shape and an inner peripheral shape (which corresponds to a peripheral shape of the hole 10I) along a lateral cross-section of the first projection 10Q are similar crescent shapes. In the present embodiment, a peripheral shape of the hole 10I formed on the side of an inner surface of the first head section molded member 10a is not particularly limited as long as it is defined as a shape corresponding to an outer peripheral shape along a lateral cross-section of the second projection 10P.

[0049] The number of the first projection 20Q in the first body section molded member 20a is one and is formed to correspond to the second projection 20P formed in the second body section formation member 20b. The first projection 20Q includes a hole 20I formed from a distal end toward a base end. In the present embodiment, a peripheral shape of the hole 20I formed on the side of an inner surface of the first body section molded member 20a is not particularly limited as long as it is defined as a shape corresponding to an outer peripheral shape along a lateral cross-section of the second projection 20P.

Third Embodiment

[0050] In the first and second embodiments, the shape (i.e., the outer peripheral shape) of the second projection 10P is, as examples, the star, the rectangular, the crescent and the hexagon. However, the shape (i.e., the outer peripheral shape) of the second projection 10P is not limited to these shapes and other shapes, but other than a circle, may be employed. For example, the outer peripheral shape of the second projection 10P is defined to the any shape other than a circle and, it is only necessary that rotation of the second projection 10P about the central axis is regulated when the second projection 10P is inserted and fit in the first projection 10Q (an inner peripheral shape of the first projection 10Q corresponds to the shape of the second projection 10P).

[0051] Figs. 7A to 7E illustrate some other examples of the shape (i.e., the outer peripheral shape) of the second projection 10P. The inner peripheral shape of the first projection 10Q is a similar to that of the second projection 10P. Fig. 7A illustrates an elliptical shape. Fig. 7B illustrates a gourd shape. Fig. 7C illustrates a shape in which two circles are overlapped. Fig. 7D illustrates a triangular shape. Fig. 7E illustrates a pentagonal shape.

[0052] In each embodiment described above, the present invention is applied to the head section and the body section in the assembly toy of the doll which includes the head section, the body section, the arm sections and the leg sections. However, the present invention may be applied also to the arm sections and the leg sections.

[0053] Each embodiment described above relates to the assembly toy which is the doll. However, the present invention is not limited to dolls and may be applied to other assembly toys, such as robots, vehicles and buildings.

[0054] In each embodiment described above, the second projection is inserted and fit in the first projection, but this configuration is not restrictive. The first projection may be inserted and fit in the second projection.

[0055] Although the assembly toy of the present invention is made of resin, the material is not limited to the same. For example, the assembly toy may be made of metal or wood.

[0056] In the assembly toy of the present invention, a knock pin of which outer peripheral shape of the second projection is other than a circle and a circular knock pin may be used at the same time.

Claims

1. An assembly toy, comprising a first molded member (10a, 20a) and a second molded member (10b, 20b) which are aligned with and face each other, wherein:

a first projection (10Q) is formed on the second molded member on an inner surface which is a concave surface;

a second projection (10P, 20P, 10Q, 20Q) is formed in the first molded member (10a, 20a) on an inner surface which is a concave surface and faces the inner concave surface of the second molded member (10b, 20b);

Characterised in that a hole (10H, 20H, 10I, 20I) is formed on an end of the first projection (10Q) in which the second projection (10P, 20P, 10Q, 20Q) fits;

the outer peripheral shape of the second projection (10P, 20P, 10Q, 20Q) along a cross-section perpendicular to the direction in which the projection (10P, 20P, 10Q, 20Q) projects is different from circular;

the inner peripheral shape of the hole (10H, 20H, 10I, 20I) which faces the first molded member (10a, 20a) corresponds to the outer peripheral shape of the second projection (10P, 20P, 10Q, 20Q) such that

the second projection (10P, 20P, 10Q, 20Q) fits in the hole (10H, 20H, 10I, 20I) without being able to rotate about the central

axis thereof.

2. The assembly toy according to claim 1, wherein the outer peripheral shape of the second projection (10P, 20P, 10Q, 20Q) along the cross-section perpendicular to the direction in which the projection (10P, 20P, 10Q, 20Q) projects is a star shape.

3. The assembly toy according to claim 1, wherein the outer peripheral shape of the second projection (10P, 20P, 10Q, 20Q) along the cross-section perpendicular to the direction in which the projection (10P, 20P, 10Q, 20Q) projects is a rectangular shape.

4. The assembly toy according to claim 1, wherein the outer peripheral shape of the second projection (10P, 20P, 10Q, 20Q) along the cross-section perpendicular to the direction in which the projection (10P, 20P, 10Q, 20Q) projects is a crescent shape.

5. The assembly toy according to claim 1, wherein the outer peripheral shape of the second projection (10P, 20P, 10Q, 20Q) along the cross-section perpendicular to the direction in which the projection (10P, 20P, 10Q, 20Q) projects is a hexagonal shape.

6. The assembly toy according to any one of claims 1 to 5, wherein a plurality of pairs of fitting portions each consisting of a pair of the second projection (10P, 20P, 10Q, 20Q) and the hole (10H, 20H, 10I, 20I) are provided on the

first molded member (10a, 20a) and the second molded member (10b, 20b) respectively.

7. The assembly toy according to claim 1, wherein:

the assembly toy includes a plurality of sections;

each of the plurality of sections includes a first molded member (10a, 20a) and a second molded member (10b, 20b); and
each of the plurality of sections has a different shape in a surface perpendicular to the direction in which the projection (10P, 20P, 10Q, 20Q) projects.

Patentansprüche

1. Zusammengesetztes Spielzeug, aufweisend ein erstes Formglied (10a, 20a) und ein zweites Formglied (10b, 20b), die aufeinander ausgerichtet und einander zugewandt sind, wobei:

ein erster Vorsprung (10Q) an dem zweiten Formglied an einer Innenfläche gebildet ist, die eine konkave Fläche ist,
ein zweiter Vorsprung (10P, 20P, 10Q, 20Q) in dem ersten Formglied (10a, 20a) an einer Innenfläche gebildet ist, die eine konkave Fläche ist und der konkaven Innenfläche des zweiten Formglieds (10b, 20b) zugewandt ist,

dadurch gekennzeichnet, dass
eine Öffnung (10H, 20H, 10I, 20I) an einem Ende des ersten Vorsprungs (10Q) gebildet ist, in die der zweite Vorsprung (10P, 20P, 10Q, 20Q) passt,
die Außenumfangsform des zweiten Vorsprungs (10P, 20P, 10Q, 20Q) entlang eines Querschnitts senkrecht zu der Richtung, in die der Vorsprung (10P, 20P, 10Q, 20Q) vorsteht, nicht kreisförmig ist, die Innenumfangsform der Öffnung (10H, 20H, 10I, 20I), die dem ersten Formglied (10a, 20a) zugewandt ist, der Außenumfangsform des zweiten Vorsprungs (10P, 20P, 10Q, 20Q) entspricht, so dass der zweite Vorsprung (10P, 20P, 10Q, 20Q) in die Öffnung (10H, 20H, 10I, 20I) passt, ohne sich um seine Mittelachse drehen zu können.

2. Zusammengesetztes Spielzeug nach Anspruch 1, wobei die Außenumfangsform des zweiten Vorsprungs (10P, 20P, 10Q, 20Q) entlang des Querschnitts senkrecht zu der Richtung, in die der Vorsprung (10P, 20P, 10Q, 20Q) vorsteht, eine Sternform ist.

3. Zusammengesetztes Spielzeug nach Anspruch 1, wobei die Außenumfangsform des zweiten Vorsprungs (10P, 20P, 10Q, 20Q) entlang des Querschnitts senkrecht zu der Richtung, in die der Vorsprung (10P, 20P, 10Q, 20Q) vorsteht, eine Rechteckform ist.

4. Zusammengesetztes Spielzeug nach Anspruch 1, wobei die Außenumfangsform des zweiten Vorsprungs (10P, 20P, 10Q, 20Q) entlang des Querschnitts senkrecht zu der Richtung, in die der Vorsprung (10P, 20P, 10Q, 20Q) vorsteht, eine Halbmondform ist.

5. Zusammengesetztes Spielzeug nach Anspruch 1, wobei die Außenumfangsform des zweiten Vorsprungs (10P, 20P, 10Q, 20Q) entlang des Querschnitts senkrecht zu der Richtung, in die der Vorsprung (10P, 20P, 10Q, 20Q) vorsteht, eine Sechseckform ist.

6. Zusammengesetztes Spielzeug nach einem der Ansprüche 1 bis 5, wobei eine Vielzahl von Paaren von passenden Teilen, die jeweils aus einem Paar des zweiten Vorsprungs (10P, 20P, 10Q, 20Q) und der Öffnung (10H, 20H, 10I, 20I) bestehen, jeweils an dem ersten Formglied (10a, 20a) und dem zweiten Formglied (10b, 20b) vorgesehen sind.

7. Zusammengesetztes Spielzeug nach Anspruch 1, wobei:

das zusammengesetzte Spielzeug eine Vielzahl von Abschnitten beinhaltet,

jeder der Vielzahl von Abschnitten ein erstes Formglied (10a, 20a) und ein zweites Formglied (10b, 20b) beinhaltet und
jeder der Vielzahl von Abschnitten eine andere Form in einer Fläche senkrecht zu der Richtung, in die der Vorsprung (10P, 20P, 10Q, 20Q) vorsteht, besitzt.

Revendications

1. Ensemble jouet, comprenant un premier organe moulé (10a, 20a) et un second organe moulé (10b, 20b) qui sont alignés l'un avec l'autre et se font face, dans lequel :

une première saillie (10Q) est formée sur le second organe moulé sur une surface interne qui est une surface concave ;
une seconde saillie (10P, 20P, 10Q, 20Q) est formée dans le premier organe moulé (10a, 20a) sur une surface interne qui est une surface concave et est tournée vers la surface concave interne du second organe moulé (10b, 20b);

caractérisé en ce que
un trou (10H, 20H, 10I, 20I) est formé sur une extrémité de la première saillie (10Q) dans lequel s'emboîte la seconde saillie (10P, 20P, 10Q, 20Q) ;
la forme périphérique externe de la seconde saillie (10P, 20P, 10Q, 20Q), le long d'une section trans-

versale perpendiculaire à la direction dans laquelle la saillie (10P, 20P, 10Q, 20Q) se projette, est autre que circulaire ;
la forme périphérique interne du trou (10H, 20H, 10I, 20I) qui est tourné vers le premier organe moulé (10a, 20a) correspond à la forme périphérique externe de la seconde saillie (10P, 20P, 10Q, 20Q) de manière que
la seconde saillie (10P, 20P, 10Q, 20Q) s'emboîte dans le trou (10H, 20H, 10I, 20I) sans pouvoir tourner autour de l'axe central du trou.

2. Ensemble jouet selon la revendication 1, dans lequel la forme périphérique externe de la seconde saillie (10P, 20P, 10Q, 20Q) le long de la section transversale perpendiculaire à la direction dans laquelle la saillie (10P, 20P, 10Q, 20Q) se projette est une forme d'étoile.

3. Ensemble jouet selon la revendication 1, dans lequel la forme périphérique externe de la seconde saillie (10P, 20P, 10Q, 20Q) le long de la section transversale perpendiculaire à la direction dans laquelle la saillie (10P, 20P, 10Q, 20Q) se projette est une forme rectangulaire.

4. Ensemble jouet selon la revendication 1, dans lequel la forme périphérique externe de la seconde saillie (10P, 20P, 10Q, 20Q) le long de la section transversale perpendiculaire à la direction dans laquelle la saillie (10P, 20P, 10Q, 20Q) se projette est une forme de croissant.

5. Ensemble jouet selon la revendication 1, dans lequel la forme périphérique externe de la seconde saillie (10P, 20P, 10Q, 20Q) le long de la section transversale perpendiculaire à la direction dans laquelle la saillie (10P, 20P, 10Q, 20Q) se projette est une forme hexagonale;

6. Ensemble jouet selon l'une quelconque des revendications 1 à 5, dans lequel une pluralité de paires de parties à emboîtement, consistant en une paire constituée par la seconde saillie (10P, 20P, 10Q, 20Q) et le trou (10H, 20H, 10I, 20I), sont prévues sur le premier organe moulé (10a, 20a) et le second organe moulé (10b, 20b), respectivement.

7. Ensemble jouet selon la revendication 1, dans lequel :

l'ensemble jouet comprend une pluralité de sections ;

chaque section de la pluralité de sections comprend un premier organe moulé (10a, 20a) et un second organe moulé (10b, 20b) ; et
chaque section de la pluralité de sections a une forme différente dans une surface perpendiculaire à la direction dans laquelle la saillie (10P, 20P, 10Q, 20Q) se projette.

FIG. 1

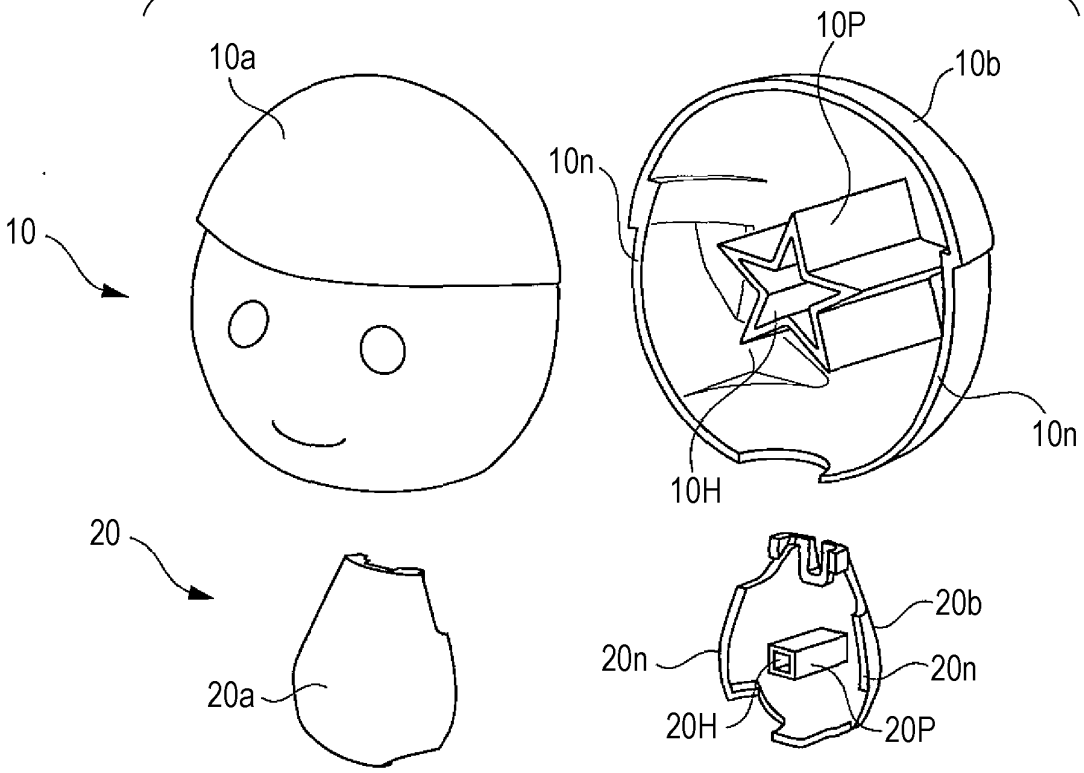

10
10a
10P
10b
10n
10n
10H
20
20a
20b
20n
20n
20H
20P

FIG. 2

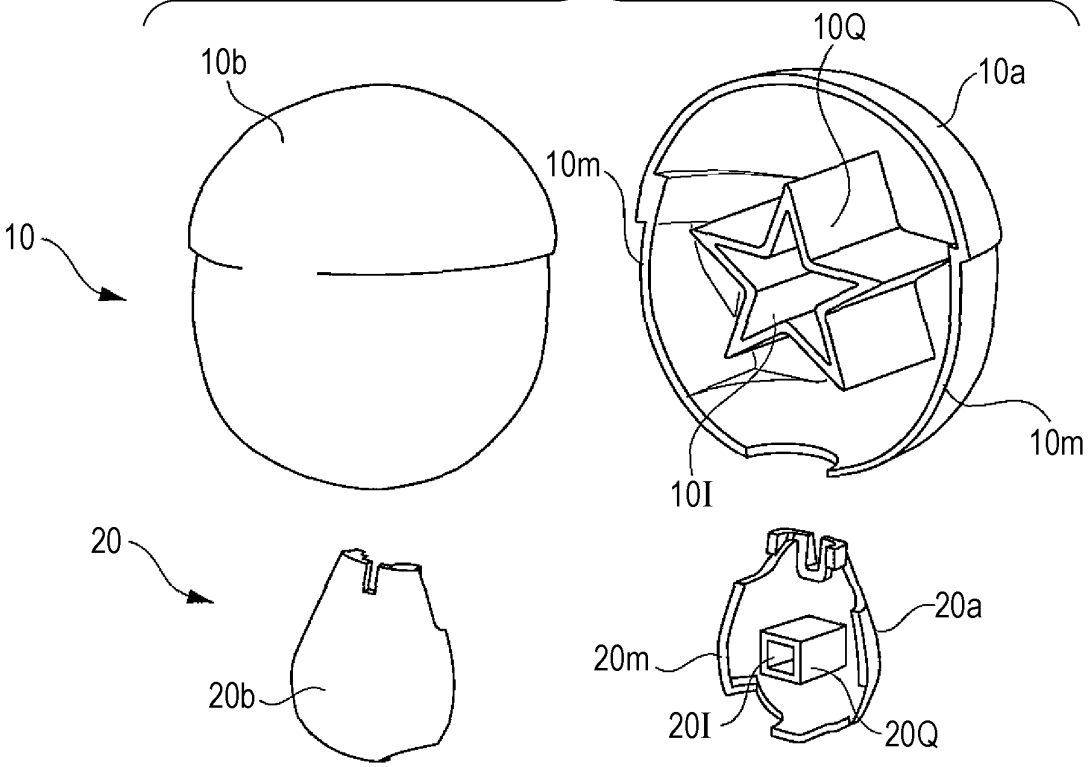

10
10b
10Q
10a
10m
10m
10I
20
20b
20a
20m
20I
20Q

FIG. 3

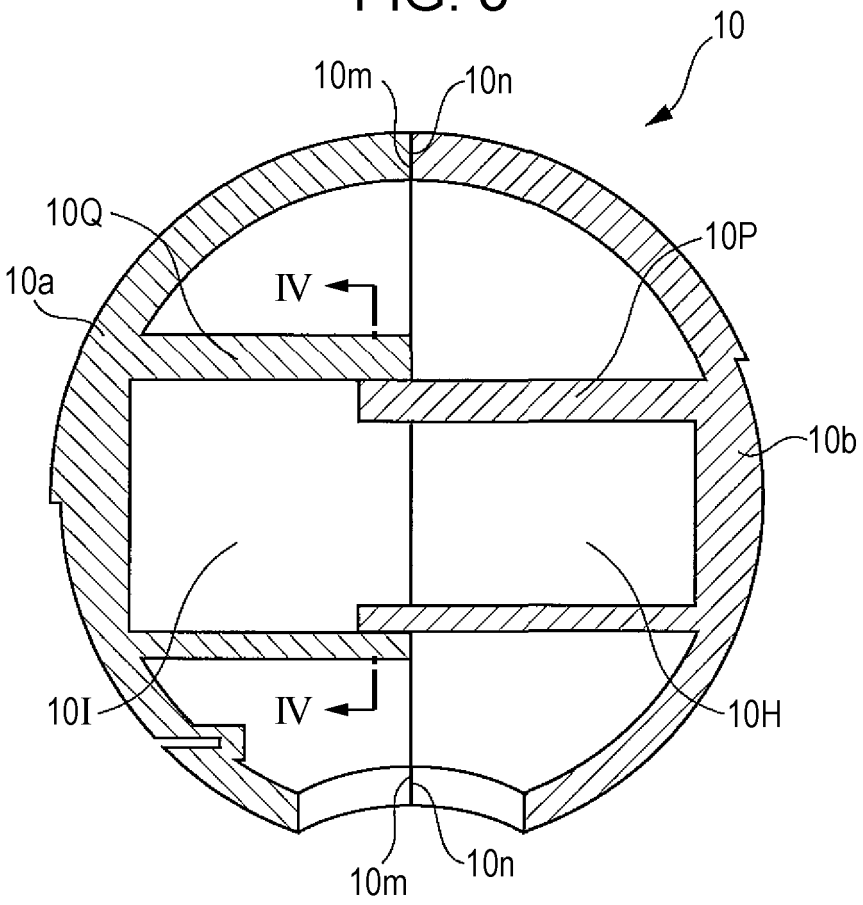


FIG. 4

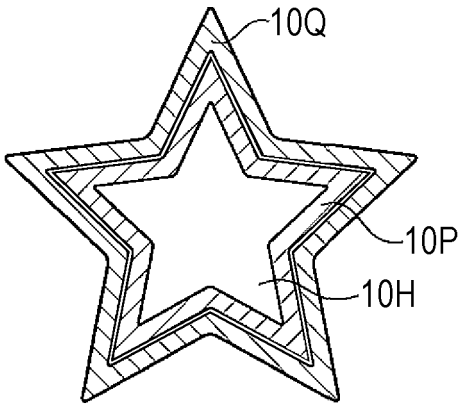


FIG. 5

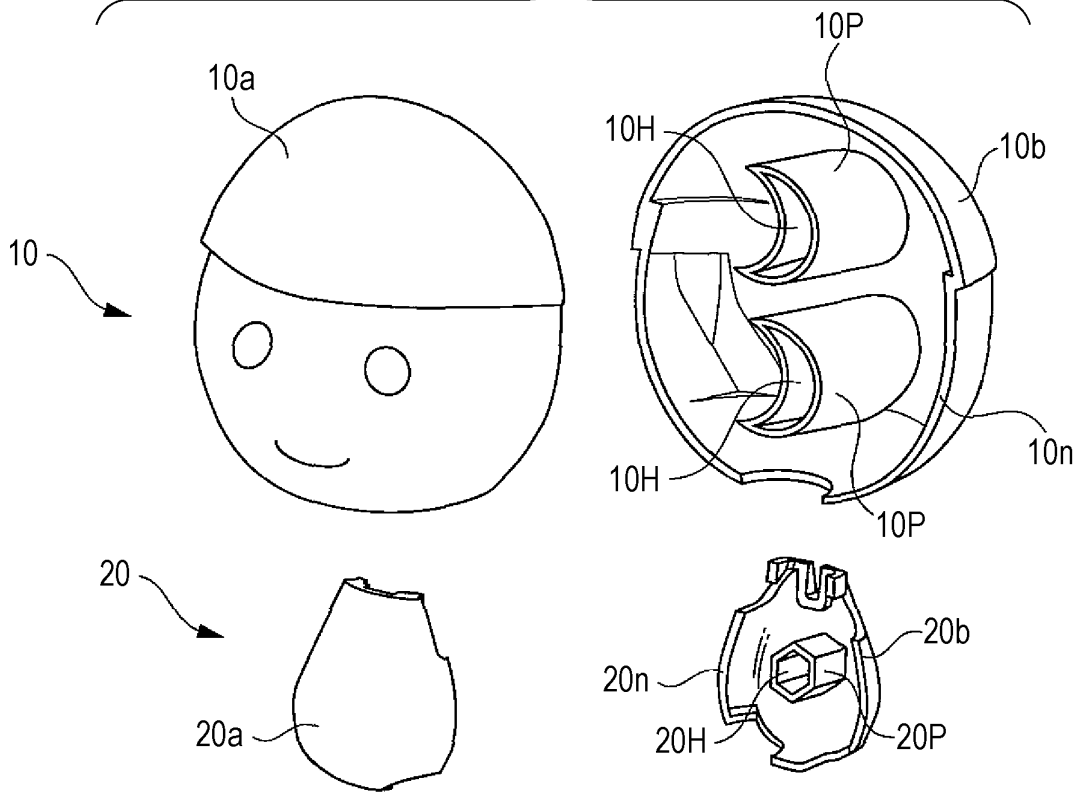

10
10a
10P
10H
10b
10H
10n
10P
20
20a
20b
20n
20H
20P

FIG. 6

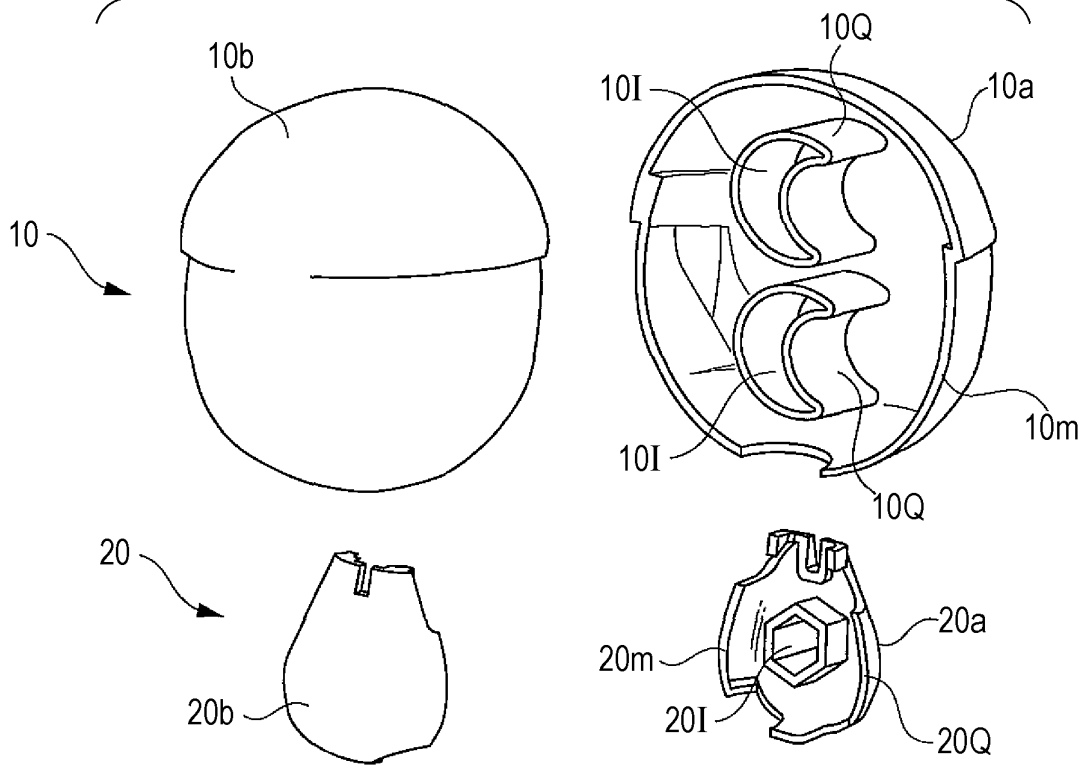

10
10b
10Q
10I
10a
10I
10m
10Q
20
20b
20m
20a
20I
20Q

FIG. 7A

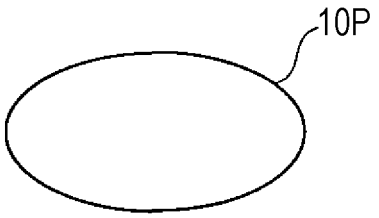


FIG. 7B

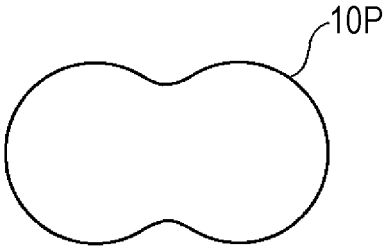


FIG. 7C

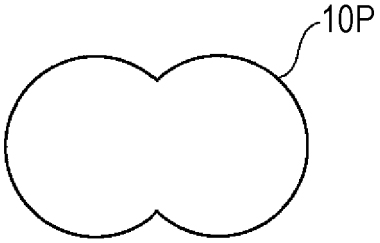


FIG. 7D

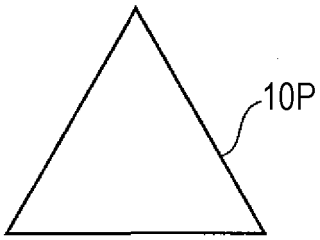


FIG. 7E

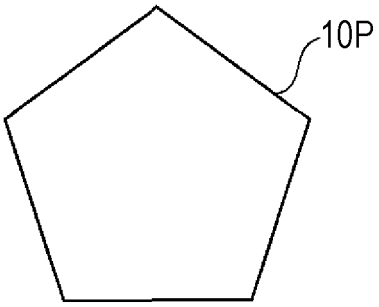
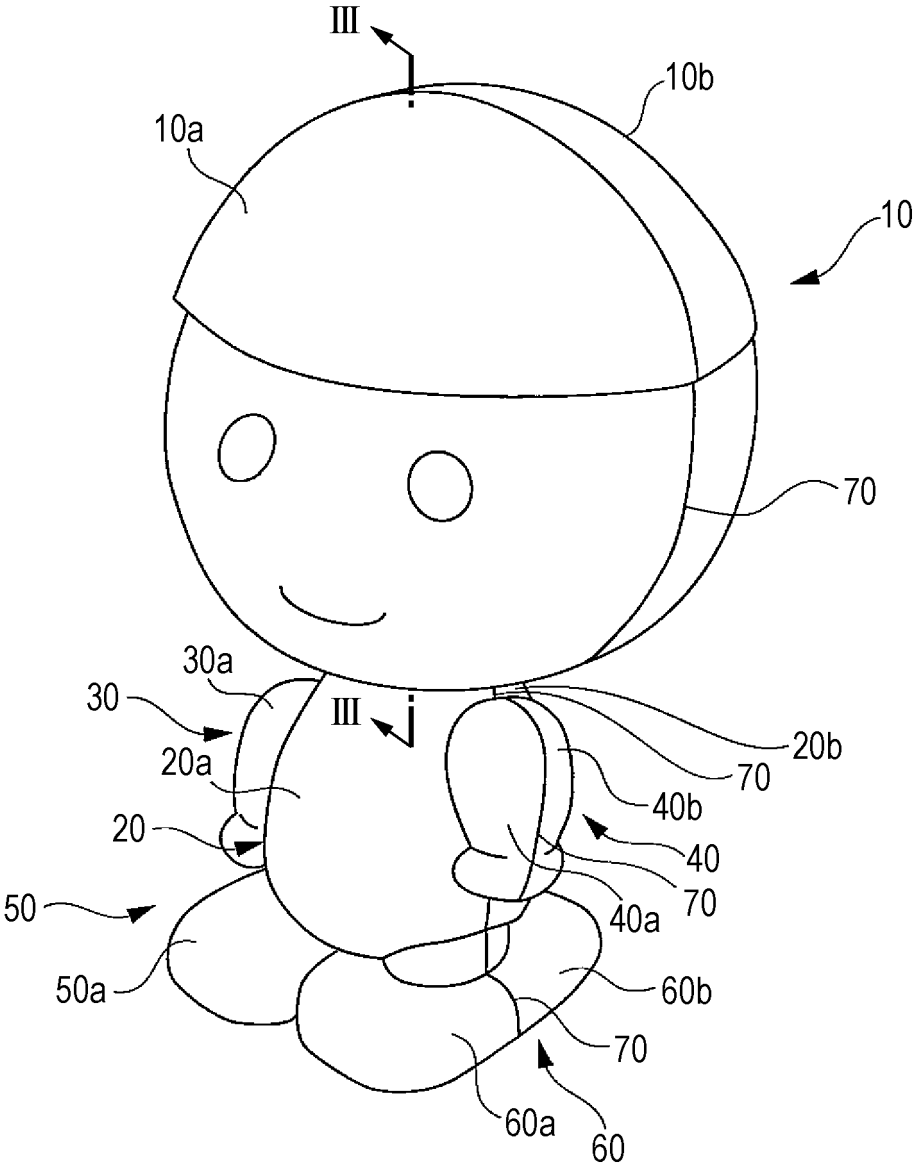


FIG. 8


III
10b
10a
10
70
30a
30
III
20b
20a
70
40b
20
40
70
50
40a
60b
50a
70
60a
60

REFERENCES CITED IN THE DESCRIPTION

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