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(54) **TRANSFORMING TOY**

SICH VERWANDELNDES SPIELZEUG

JOUET TRANSFORMABLE

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EP 3 308 841 B1

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Description

[Technical Field]

5 **[0001]** The present invention relates to a transforming toy, and more particularly, to a transforming toy that is moved to an item disposed at an arbitrary position in such a manner as to allow a portion of the body part thereof to be detached therefrom through the contact with the item, so that the transforming toy transforms into a second form from a first form.

[Background Art]

10 **[0002]** A transforming toy has a plurality of body parts having a form of a robot or car, and through the assembly of the body parts, it can transform into the robot or car toy. The single toy transforms into various forms, and accordingly, children can enjoy a variety of plays through the transforming forms, while they are directly assembling the toy.

15 **[0003]** In case of generally known card plays for children, on the other hand, drawings or characters for the plays are printed on the top or underside surfaces of rectangular cards, and the cards are turned over to check the information printed thereon in accordance with given game rules.

[0004] Such card plays for children are carried out by placing the cards on a floor by users and turning them over to check the information printed on the cards, so that the playing way is very simple to easily make the users, especially children feel bored and to provide just a function of collecting the drawings or characters printed on the cards.

20 **[0005]** According to a conventional practice, a transforming toy car is disclosed in Korean Patent No.10-1327305 (entitled "transforming toy car and playing device using the same"), wherein if a given card is attached to the underside of a toy car, the toy car is turned over to allow the underside of the attached card thereto to be exposed to the outside.

[0006] However, the transforming toy car according to the conventional practice is configured to lift or turn over the front portion thereof so as to turn over the card attached thereto.

25 **[0007]** In this case, the configuration required to turn over the card still remains on the toy car, and accordingly, the image of the character as a second form produced through the transformation still exists unnecessarily, thereby failing to provide the original image of the character.

30 **[0008]** Further, the transforming toy car according to the conventional practice is configured to turn over the card attached thereto, and accordingly, there is a limit in the degree of freedom in designing the toy car. US 3 176 429 A and JP S50 139094 U disclose toy automobiles which are configured so that assembled parts are separated according to impact or impact effect.

[Disclosure]

35 [Technical Problem]

[0009] Accordingly, the present invention has been made in view of the above-mentioned problems occurring in the prior art, and it is an object of the present invention to provide a transforming toy that is moved to an item disposed at an arbitrary position in such a manner as to allow a portion of the body part thereof to be detached therefrom through the contact with the item, so that the transforming toy transforms into a second form from a first form.

[Technical Solution]

45 **[0010]** To accomplish the above object, according to the present invention, there is provided a transforming toy including a body part, a locking part, and an item, wherein the body part has a separable body fixed thereto by means of the locking part in such a manner as to be separable therefrom, and if the locking part is released from the locked state thereof by means of the contact with the item, the separable body is separately detached from the body part, so that the body part from which the separable body is detached is developed to transform into a second form from a first form.

50 **[0011]** According to the present invention, desirably, the transforming toy further includes a pressurizing part adapted to provide a pressurizing force for pressurizing the separable body separated from the body part to allow the separable body to be moved in an arbitrary direction, to be rotatably separated in an arbitrary direction, or to be thrown in an arbitrary direction if the locking part is released from the locked state.

[0012] According to the present invention, desirably, the item includes a magnetic material disposed at the inside thereof.

55 **[0013]** According to the present invention, desirably, the transforming toy further includes a magnet part disposed on one side of the locking part in such a manner as to allow the locking part to be changed in position through the attractive force caused by the magnetic field formed together with the magnetic material disposed inside the item to allow the locking part to be released from the locked state.

[0014] According to the present invention, desirably, the locking part is changed in position through the physical contact with the item in such a manner as to be released from the locked state.

[0015] According to the present invention, desirably, the transforming toy further includes a magnet part disposed spaced apart from the locking part by a given distance in such a manner as to be attached to the item through the formation of a magnetic field with the magnetic material disposed inside the item.

[0016] According to the present invention, desirably, the locking part is changed in position through the physical contact with the item in such a manner as to be released from the locked state and comprises a magnet part disposed on one side thereof in such a manner as to be moved according to the change in position of the locking part to allow the item to be attached thereto.

[0017] According to the present invention, desirably, the body part includes: a plurality of bodies coupled to each other in such a manner as to be developable; and the separable body coupled to at least one of the plurality of bodies by means of the locking part to maintain the body part to the first form and separately detached from the plurality of bodies to allow the body part to transform into the second form through the development of the plurality of bodies if the locking part is released from the locked state by means of the item.

[0018] According to the present invention, desirably, the body part further includes a character part exposed to the outside if the body part transforms into the second form.

[0019] According to the present invention, desirably, the separable body includes: a first separable body having an accommodation space formed at the inside thereof in such a manner as to allow the locking part to be disposed therein; and second separable bodies disposed on both sides of the first separable body in such a manner as to be rotatably coupled to the first separable body.

[0020] According to the present invention, desirably, the separable body allows the underside of the item to be exposed to the outside.

[0021] According to the present invention, desirably, the second form includes at least one of animal, robot, human, and animation character forms.

[Advantageous Effects]

[0022] According to the present invention, the transforming toy is moved to the item disposed at the arbitrary position in such a manner as to allow a portion of the body part thereof to be detached therefrom through the contact with the item, so that the transforming toy transforms into the second form from the first form, thereby greatly improving the excitement of the play.

[0023] In addition, the transforming toy according to the present invention is configured to allow a portion of the body part thereof to be completely detached therefrom, so that the image of the character part can be more obviously provided after the transformation is finished, thereby improving the degree of completion of the transforming toy.

[0024] Further, the transforming toy according to the present invention is configured to separate the configuration required for the transformation from the configuration required for the character after the transformation, thereby improving the degree of freedom in the design of the transforming toy.

[Description of Drawings]

[0025]

FIG. 1 is a perspective view showing a transforming toy according to a first embodiment of the present invention.

FIG. 2 is a perspective view showing the operating state of the transforming toy according to the first embodiment of the present invention.

FIG. 3 is an exploded perspective view showing the transforming toy according to the first embodiment of the present invention.

FIG. 4 is a sectional view showing the configuration of the transforming toy according to the first embodiment of the present invention.

FIG. 5 is a sectional view showing the operation process of the transforming toy according to the first embodiment of the present invention.

FIG. 6 is a sectional view showing the configuration of a transforming toy according to a second embodiment of the present invention.

FIG. 7 is a sectional view showing the operation process of the transforming toy according to the second embodiment of the present invention.

FIG. 8 is a sectional view showing a transforming toy according to a third embodiment of the present invention.

[Mode for Invention]

[0026] Hereinafter, an explanation on a transforming toy according to the present invention will be in detail given with reference to the attached drawing.

(First Embodiment)

[0027] FIG.1 is a perspective view showing a transforming toy according to a first embodiment of the present invention, FIG.2 is a perspective view showing the operating state of the transforming toy according to the first embodiment of the present invention, FIG.3 is an exploded perspective view showing the transforming toy according to the first embodiment of the present invention, FIG.4 is a sectional view showing the configuration of the transforming toy according to the first embodiment of the present invention, and FIG.5 is a sectional view showing the operation process of the transforming toy according to the first embodiment of the present invention.

[0028] As shown in FIGS.1 to 5, a transforming toy 100 according to a first embodiment of the present invention includes a body part 110 forming a body thereof, a locking part 120 as locking means, a magnet part 130, a pressurizing part 140, and an item 200, wherein the body part 110 has a separable body 112 fixed thereto by means of the locking part 120 in such a manner as to be separable therefrom, and if the locking part 120 is released from the locked state thereof by means of the contact with the item 200, the separable body 112 is separately detached from the body part 110, so that the body part 110 from which the separable body 112 is detached is developed to transform into a second form from a first form.

[0029] If the transforming toy 100 according to the present invention is moved to the item 200 disposed at an arbitrary position, in more detail, the transforming toy 100 comes into contact with the item 200 to allow the locking part 120 to be released from the locked state thereof, so that the transforming toy 100 transforms into the second form from the first form.

[0030] The body part 110 includes: a plurality of bodies 111, 113 and 114 coupled to each other in such a manner as to be developable; the separable body 112 coupled to at least one of the plurality of bodies 111, 113 and 114 by means of the locking part 120 to maintain the body part 110 to the first form and separately detached from the plurality of bodies 111, 113 and 114 to allow the body part 110 to transform into the second form through the development of the plurality of bodies 111, 113 and 114 if the locking part 120 is released from the locked state by means of the item 200; and a character part 115 exposed to the outside if the body part 110 transforms into the second form.

[0031] In more detail, the plurality of bodies 111, 113 and 114, which are coupled to each other in such a manner as to be developable, are the upper body 111, the side bodies 113, and the rear body 114. The upper body 111 is rotatably coupled upwardly/downwardly to the rear body 114 through an upper body hinge 111a disposed on one side thereof, and the side bodies 113 are rotatably coupled in left and right directions to the rear body 114 through side body hinges 113a disposed on one side thereof.

[0032] According to the first embodiment of the present invention, for the brevity of the description, the body part has the three bodies rotatably coupled to each other, but of course, the number of bodies and the coupled state of the bodies may be changed according to the developed directions and configurations of the bodies, without being limited thereto.

[0033] According to the first embodiment of the present invention, further, the first form of the transforming toy 100 is a form of a car, and the second form thereof is a form of a character 117b such as a robot, human, animal and so on, an object having an arbitrary form, or the like.

[0034] According to the present invention, the first form of the transforming toy 100 is the form of a car, for the brevity of the description, but of course, it may have all forms of movable objects having wheels.

[0035] If the transforming toy 100 has the first form, the upper body 111 is configured to take the outer shape of the car, and also, the upper body 111 has the character part 115 disposed at the inside thereof, so that if the transforming toy 100 transforms into the second form, the character part 115 is exposed to the outside.

[0036] The separable body 112 is separably disposed on one side of the body part 110 in such a manner as to be fixed to one side of the body part 110 by means- of the locking part 120 disposed at the inside thereof, and if the locking part 120 is released from the locked state by means of the item 200, the separable body 112 is separately detached from the plurality of bodies 111, 113 and 114 to allow the body part 110 to be developed to transform into the second form from the first form.

[0037] If the separable body 112 is separated from the body part 110, further, it is moved or thrown to an arbitrary direction, so that it is completely isolated from the body part 110.

[0038] If the locking part 120 is released from the locked state by means of the item 200, the separable body 112 is separated from the upper body 111 and the side bodies 113 of the body part 110 and is thus moved or thrown to the front, left, right or rear direction from the moving direction of the transforming toy 100 by means of a pressurizing part 140 as will be discussed later.

[0039] Further, the separable body 112 includes a first separable body 112a, second separable bodies 112b, front

wheels 112c, and springs 112d, and if the item 200 is attached to the underside of the separable body 112, the item 200 attached to the underside of the separable body 112 is exposed to the outside.

[0040] In more detail, the information displayed or printed on the underside of the item 200 is exposed to the outside and is thus checked by a user.

[0041] The first separable body 112a has an accommodation space formed at the inside thereof in such a manner as to allow the locking part 120 and the pressurizing part 140 to be disposed therein.

[0042] Further, the first separable body 112a has first separable body rotary shafts 112a' -protruding by a given length from both sides thereof, so that it can be rotated through the first separable body rotary shafts 112a'.

[0043] The second separable bodies 112b are disposed on both sides of the first separable body 112a and include coupling holes 112b' adapted to allow the first separable body rotary shafts 112a' of the first separable body 112a to be rotatably fitted thereto and fastening members 112b" coupled to the side bodies 113 of the body part 110.

[0044] Further, the second separable bodies 112b have the front wheels 112c disposed on one side thereof and the springs 112d adapted to provide elastic forces to allow the first separable body 112a to be rotated to a given direction if the separable body 112 is separated from the body part 110.

[0045] The front wheels 112c are disposed on the respective second separable bodies 112b so that the separable body 112 can be easily moved after the separation from the body part 110.

[0046] According to the first embodiment of the present invention, further, the front wheels 112c are disposed on the separable body 112, but they may be disposed on arbitrary positions of the upper body 111, the side bodies 113 and the character part 115, without being limited thereto.

[0047] The side bodies 113 are horizontally rotatably coupled in left and right directions to the rear body 114 through the side body hinges 113a disposed on one side thereof and have locking protrusions 113b formed on the other side thereof in such a manner as to be fixedly fastened to the ends of the upper body 111 to prevent the upward rotation thereof and first fastening grooves 113c and second fastening grooves 113d adapted to fasten the side bodies 113 to the separable body 112.

[0048] The first fastening grooves 113c are coupled to the locking part 120 to allow the separable body 112 and the side bodies 113 to be contactedly fixed to each other and also to prevent the side bodies 112 from being rotated in left, right, and horizontal directions.

[0049] The second fastening grooves 113d are coupled to the fastening members 112b" of the separable body 112 to allow the separable body 112 to more rigidly come into close contact with the side bodies 113.

[0050] Through the coupling of the first fastening grooves 113c to the locking part 120 and the coupling of the second fastening grooves 113d to the fastening members 112b", in more detail, the separable body 112 is not movable at all on one side of the side bodies 113, so that the locked state of the locking part 120 can be rigidly maintained.

[0051] The rear body 114 serves to support the developing operations caused by the rotation of the upper body 111 and the side bodies 113 and includes first rear body hinges 114a, second rear body hinges 114b, and rear wheels 114e.

[0052] The first rear body hinges 114a are coupled to the upper body 111 through a first shaft 114c and include a spring 114c' adapted to provide an elastic force to allow the upper body 111 to be vertically rotated upwardly.

[0053] The second rear body hinges 114b are coupled to the side bodies 113 through second shafts 114d and include springs 114d' adapted to provide elastic forces to allow the side bodies 113 to be horizontally rotated in a left or right direction.

[0054] The character part 115 is disposed inside the upper body 111 and has a variety of shapes such as animals, robots, humans, animation characters and so on.

[0055] The locking part 120 is disposed in the separable body 112 to maintain the locked state where the separable body 112, the upper body 111 and the side bodies 113 are coupled to each other, so that the transforming toy 100 can be maintained to the first form, and the locking part 120 includes a locking part body 121, a pair of latches 122, and latch coupling members 123.

[0056] The locking part body 121 is movably disposed inside the separable body 112 in upward/downward directions.

[0057] The latches 122 have one side rotatably connected to the locking part body 121 and the other side having locking protrusions coupled to the first fastening grooves 113c of the side bodies 113, so that according to the upward/downward movements of the locking part body 121, the locking protrusions of the latches 122 are maintained in the state of being fastened to the first fastening grooves 113c or they are separated therefrom and thus released from the locked states.

[0058] The latch coupling members 123 protrude by a given length from both sides of the locking part body 121 to allow the latches 122 to be rotatably coupled to both sides of the locking part body 121.

[0059] The magnet part 130 is disposed on the underside of the locking part 120 in such a manner as to be attached to the item 200 through the attractive force caused by the magnetic field formed together with a magnetic material 210 disposed inside the item 200, so that the locking part 120 is moved downwardly and is thus released from the locked state, and the magnet part 130 includes a magnet 131 and a spring 132.

[0060] In more detail, the spring 132 is adapted to provide an elastic force to allow the locking part 120 to be supportedly

maintained at a given position, so that the locking part 120 can be maintained at the locked state.

[0061] Further, the magnet 131 moves the locking part 120 downwardly through the attractive force generated by the magnetic field with the item 200, so that the latches 122 of the locking part 120 are rotated to permit the locking part 120 to be released from the locked state.

[0062] If the attractive force generated by the magnetic field disappears, after that, the locking part 120 is moved upwardly through the elastic force of the spring 132 and is thus returned to its original position, so that the locking part 120 is returned to its original state, that is, the locked state.

[0063] The pressurizing part 140 is disposed on the separable body 112, and if the locking part 120 is released from the locked state, the pressurizing part 140 serves to provide a pressurizing force for pressurizing the separable body 112 separated from the body part 110 to allow the separable body 112 to be moved in an arbitrary direction, to be rotating separated in an arbitrary direction, or to be thrown in an arbitrary direction. The pressurizing part 140 includes a pressurizing latch 141 and a spring 142.

[0064] The pressurizing latch 141 protrudes toward the upper body 111 or the character part 115 and thus comes into contact with the upper body 111 or the character part 115, so that if the locking part 120 is released from the locked state, the pressurizing latch 141 pushes the upper body 111 or the character part 115 to allow the separable body 112 to be moved to a given direction.

[0065] The spring 142 is adapted to provide an elastic force to the pressurizing latch 141 to allow the separable body 112 to be moved to the given direction if the locking part 120 is released from the locked state.

[0066] According to the first embodiment of the present invention, the pressurizing part 140 pushes the separable body 112 in the driving direction of the transforming toy 100 to allow the separable body 112 to be moved to the given direction, but without being limited thereto, if the pressurizing part 140 is eccentrically disposed at the left or right side or disposed to pressurize the ground thereagainst, the separable body 112 separated by the pressurizing force of the pressurizing part 140 is moved and rotated in the left or right direction with respect to the driving direction, or the separable body 112 separated by the pressurization against the ground is popped up or thrown behind the transforming toy 100.

[0067] According to the first embodiment of the present invention, the pressurizing part 140 is disposed in the separable body 112, but of course, it may be disposed on the body part 110 to which the separable body 112 is coupled, without being limited thereto.

[0068] The item 200 is a plate-shaped member having any one selected from circular, oval, and polygonal outer shapes, and it is made of paper, a plastic synthetic resin, and so on. Desirably, the item 200 is made of the plastic synthetic resin, and also, the item 200 has at least one selected from the magnetic material 210 and a magnet disposed in the interior thereof to form the magnetic field together with the magnet part 130.

[0069] Further, the item 200 has a given character, numbers, text, figure, and pattern printed on the external surfaces thereof or has a printed matter attached to the external surfaces thereof. Further, the surface of the item 200 may be formed by means of depressed engraving or embossed carving.

[0070] Next, an explanation on the operation process of the transforming toy 100 according to the first embodiment of the present invention will be given.

[0071] First, the upper body 111, the separable body 112, the side bodies 113, and the rear body 114 are coupled to one another to allow the transforming toy 100 to become in the locked state where the first form is maintained.

[0072] After that, the item 200 is located at an arbitrary position, and the transformable toy 100 having the first form is driven toward the item 200.

[0073] If the transforming toy 100 passes through the item 200, the attractive force generated by the magnetic field formed between the item 200 and the magnet part 130 of the transforming toy 100 allows the item 200 to be attached to the magnet part 130, so that the locking part 130 at which the magnet part 130 is located is moved and thus released from the locked state.

[0074] If the locking part 130 is released from the locked state, the separable body 112 in which the locking part 130 is disposed is separated from the side bodies 113, and the side bodies 113 are horizontally rotated in the left/right directions around the side body hinges 113a, so that the upper body 111 maintained at the given position through the side bodies 113 is also rotated upwardly, thereby allowing the transforming toy 100 to transform into the second form from the first form.

[0075] If the locking part 130 is released from the locked state, further, the pressurizing part 140 pressurizes the upper body 111 or the character part 115 through the pressurizing latch 141 to allow the separable body 112 to be separately moved to the driving direction of the transforming toy 100.

[0076] On the other hand, if the separable body 112 is separated from the transforming toy 100, the first separable body 112a is rotated vertically with respect to the second separable bodies 112b by means of the elastic forces of the springs 112d to allow the item 200 attached to the underside of the separable body 112 to be exposed to the outside.

[0077] Accordingly, the transforming toy according to the first embodiment of the present invention is configured to transform into the second form from the first form by the separation of the separable body from the body part through the contact with the item, so that the configuration required for the transformation and the configuration required after

the transformation are distinguished from each other to more obviously provide the image of the character part after the transformation, and also, the excitement of the play can be more improved through the separation of the separable body portion from the body part and the exposure of the item to the outside.

5 (Second Embodiment)

[0078] FIG.6 is a sectional view showing the configuration of a transforming toy according to a second embodiment of the present invention, and FIG.7 is a sectional view showing the operation process of the transforming toy according to the second embodiment of the present invention.

10 **[0079]** As shown in FIGS.6 and 7, a transforming toy 100' according to a second embodiment of the present invention includes a body part 110 forming a body thereof, a locking part 120' as locking means, a magnet part 130', a pressurizing part 140, and an item 200, wherein the body part 110 has a separable body 112' fixed thereto by means of the locking part 120' in such a manner as to be separable therefrom, and if the locking part 120' is released from the locked state thereof by means of the contact with the item 200, the separable body 112' is separately detached from the body part 110, so that the body part 110 from which the separable body 112' is detached is developed to transform into a second form from a first form.

15 **[0080]** The locking part 120' and the magnet part 130' in the transforming toy 100' according to the second embodiment of the present invention are differently configured from those in the transforming toy 100 according to the first embodiment of the present invention. In the second embodiment of the present invention, accordingly, the repeated explanation on the same parts as the transforming toy 100 according to the first embodiment of the present invention will be avoided for the brevity of the description, and the corresponding parts in the first and second embodiments of the present invention are indicated by corresponding reference numerals.

20 **[0081]** The locking part 120' is changed in position by means of the physical contact with the item 200 in such a manner as to be maintained to the locked state or to be released from the locked state, and the locking part 120' includes a locking part body 121', latches 122' and rotary shafts 123'.

25 **[0082]** The locking part body 121' has one side end portion protruding outwardly therefrom in such a manner as to pass through the underside of the separable body 112' and thus to come into physical contact with the item 200, and the locking part body 121' further includes a spring (not shown) adapted to provide an elastic force to allow the locking part body 121' to be maintained at a given position.

30 **[0083]** The latches 122' have one side connected to the locking part body 121' through the rotary shafts 123' and the other side having locking protrusions coupled to the first fastening grooves 113c of the side bodies 113, so that according to the operation of the locking part body 121', the locking part 120' is rotated around the rotary shafts 123' in such a manner as to be maintained to the locked state or to be released from the locked state.

35 **[0084]** The magnet part 130' is fixedly disposed on one side of the bottom of the separable body 112', while being spaced apart from the locking part 120' by a given distance, in such a manner as to form a magnetic field together with a magnetic material 210 disposed inside the item 200 to allow the item 200 contacted physically with the locking part 120' to be attached to the underside of the separable body 112'.

40 **[0085]** Accordingly, the transforming toy according to the second embodiment of the present invention is configured to transform into the second form from the first form by the separation of the separable body from the body part through the contact with the item, so that the configuration required for the transformation and the configuration required after the transformation are distinguished from each other to more obviously provide the image of the character part after the transformation, and also, the excitement of the play can be more improved through the separation of the separable body portion from the body part and the exposure of the item to the outside.

45 (Third Embodiment)

[0086] FIG.8 is a sectional view showing a transforming toy according to a third embodiment of the present invention.

50 **[0087]** As shown in FIG.8, a transforming toy 100" according to a third embodiment of the present invention includes a body part 110 forming a body thereof, a locking part 120" as locking means, a magnet part 130", a pressurizing part 140, and an item 200, wherein the body part 110 has a separable body 112" fixed thereto by means of the locking part 120" in such a manner as to be separable therefrom, and if the locking part 120" is released from the locked state thereof by means of the contact with the item 200, the separable body 112" is separately detached from the body part 110, so that the body part 110 from which the separable body 112" is detached is developed to transform into a second form from a first form.

55 **[0088]** The locking part 120" and the magnet part 130" in the transforming toy 100" according to the third embodiment of the present invention are differently configured from those in the transforming toy 100 according to the first embodiment of the present invention. In the third embodiment of the present invention, accordingly, the repeated explanation on the same parts as the transforming toy 100 according to the first embodiment of the present invention will be avoided for

the brevity of the description, and the corresponding parts in the first and third embodiments of the present invention are indicated by corresponding reference numerals.

[0089] The locking part 120" is changed in position by means of the physical contact with the item 200 in such a manner as to be maintained to the locked state or to be released from the locked state. As the locking part 120" is changed in position, the magnet part 130", which is disposed on one side of the locking part 120", is moved to allow the item 200 physically contacted with the locking part 120" to be attached thereto, and the locking part 120" includes a locking part body 121", latches 122", rotary shafts 123", and a link 124".

[0090] The locking part body 121" has one side end portion protruding outwardly therefrom in such a manner as to pass through the underside of the separable body 112" and thus to come into physical contact with the item 200, and the locking part body 121" further includes a spring (not shown) adapted to provide an elastic force to allow the locking part body 121" to be maintained at a given position.

[0091] The latches 122" have one side connected to the locking part body 121" through the rotary shafts 123" and the other side having locking protrusions coupled to the first fastening grooves 113c of the side bodies 113, so that according to the operation of the locking part body 121", the locking part 120" is rotated around the rotary shafts 123" in such a manner as to be maintained to the locked state or to be released from the locked state.

[0092] The link 124" has one side connected to the locking part body 121" through the rotary shafts 123" and the other side extended therefrom by a given distance in such a manner as to have the magnet part 130" fixedly disposed on the end thereof.

[0093] The magnet part 130" is fixedly disposed on the link 124" of the locking part 120", and if the locking part 120" is rotated around the rotary shafts 123" and changed in position through the physical contact with the item 200, the magnet part 130" is moved downwardly on the figure to allow the item 200 to be attached thereto.

[0094] Also, the magnet part 130" is changed in position in such a manner as to pass through the underside of the separable body 112" to allow the item 200 to be physically contacted therewith and thus attached thereto, and the magnet part 130" may include a magnet, a vacuum compression pad like a suction pad, a viscous material or adhesive with given viscosity providing an adhesive force, so as to allow the item 200 to be attached thereto.

[0095] Accordingly, the transforming toy according to the third embodiment of the present invention is configured to transform into the second form from the first form by the separation of the separable body from the body part through the contact with the item, so that the configuration required for the transformation and the configuration required after the transformation are distinguished from each other to more obviously provide the image of the character part after the transformation, and also, the excitement of the play can be more improved through the separation of the separable body portion from the body part and the exposure of the item to the outside.

[0096] While the present invention has been described with reference to the particular illustrative embodiments, it is not to be restricted by the embodiments but only by the appended claims. It is to be appreciated that those skilled in the art can change or modify the embodiments without departing from the scope of the present invention.

[0097] In the description, the thicknesses of the lines or the sizes of the components shown in the drawing may be magnified for the clarity and convenience of the description. Further, the terms as will be discussed later are defined in accordance with the functions of the present invention, but may be varied under the intention or regulation of a user or operator. Therefore, they should be defined on the basis of the whole scope of the present invention.

Explanations on Reference Numerals

[0098]

100, 100', 100":	transforming toy 110: body part
111:	upper body 111a: upper body hinge
112:	separable body 112a: first separable body
112a':	first separable body rotary shaft
112b:	second separable body
112b':	coupling hole
112b":	fastening member
112c:	front wheel
112d:	spring
113:	side body
113a:	side body hinge
113b:	locking protrusion
113c:	first fastening groove
114a:	first rear body hinge
114b:	second rear body hinge
114c:	first shaft
114c':	spring
114d:	second shaft
114d':	spring

(continued)

	114e: rear wheel	115: character part
	120: locking part	121: locking part body
5	122: latch	123: latch coupling member
	130: magnet part	131: magnet
	132: spring	140: pressurizing part
	141: pressurizing latch	142: spring
10	200: item	210: magnetic material

Claims

- 15 1. A transforming toy comprising a body part (110), a locking part (120, 120', 120"), and an item (200), wherein the body part (110) has a separable body (112, 112', 112") fixed thereto by means of the locking part (120, 120', 120") in such a manner as to be separable therefrom, and if the locking part (120, 120', 120") is released from the locked state thereof by changing the locking part (120, 120', 120") in position through the item (200), the separable body (112, 112', 112") is separately detached from the body part (110), so that the body part (110) from which the separable body (112, 112', 112") is detached is developed to thereby allow an outer shape of the body part (110) to transform into a second form from a first form.
- 20 2. The transforming toy according to claim 1, further comprising a pressurizing part (140) adapted to provide a pressurizing force for pressurizing the separable body (112, 112', 112") separated from the body part (110) to allow the separable body (112, 112', 112") to be moved in an arbitrary direction, to be rotatively separated in an arbitrary direction, or to be thrown in an arbitrary direction if the locking part (120, 120', 120") is released from the locked state.
- 25 3. The transforming toy according to claim 1 or 2, wherein the item (200) comprises a magnetic material (210) disposed at the inside thereof.
- 30 4. The transforming toy according to claim 3, further comprising a magnet part (130) disposed on one side of the locking part (120) in such a manner as to allow the locking part (120) to be changed in position through the attractive force caused by the magnetic field formed together with the magnetic material (210) disposed inside the item (200) to allow the locking part (120) to be released from the locked state.
- 35 5. The transforming toy according to claim 3, wherein the locking part (120') is changed in position through the physical contact with the item (200) in such a manner as to be released from the locked state.
- 40 6. The transforming toy according to claim 5, further comprising a magnet part (130') disposed spaced apart from the locking part (120') by a given distance in such a manner as to be attached to the item (200) through the formation of a magnetic field with the magnetic material (210) disposed inside the item (200).
- 45 7. The transforming toy according to claim 3, wherein the locking part (120") is changed in position through the physical contact with the item (200) in such a manner as to be released from the locked state and comprises a magnet part (130") disposed on one side thereof in such a manner as to be moved according to the change in position of the locking part (120") to allow the item (200) to be attached thereto.
- 50 8. The transforming toy according to claim 1, wherein the body part (110) comprises:
a plurality of bodies (111, 113 and 114) coupled to each other in such a manner as to be developable; and the separable body (112, 112', 112") coupled to at least one of the plurality of bodies (111, 113 and 114) by means of the locking part (120, 120', 120") to maintain the body part (110) to the first form and separately detached from the plurality of bodies (111, 113 and 114) to allow the body part (110) to transform into the second form through the development of the plurality of bodies (111, 113 and 114) if the locking part (120, 120', 120") is released from the locked state by means of the item (200).
- 55 9. The transforming toy according to claim 8, wherein the body part (110) further comprises a character part (115) exposed to the outside if the body part (110) transforms into the second form.

10. The transforming toy according to claim 8, wherein the separable body (112, 112', 112'') comprises:

5 a first separable body (112a) having an accommodation space formed at the inside thereof in such a manner as to allow the locking part (120, 120', 120'') to be disposed therein; and
second separable bodies (112b) disposed on both sides of the first separable body (112a) in such a manner as to be rotatably coupled to the first separable body (112a).

11. The transforming toy according to claim 8, wherein if the separable body (112, 112', 112'') is detached and removed from the body part (110) as the item (200) is attached to the underside of the separable body (112, 112', 112''), the separable body (112, 112', 112'') allows the underside of the item (200) attached to the underside of the separable body (112, 112', 112'') to be exposed to the outside.

12. The transforming toy according to claim 1, wherein the second form comprises at least one of animal, robot, human, and animation character forms.

Patentansprüche

1. Sich verwandelndes Spielzeug, umfassend einen Körperteil (110), einen Verriegelungsteil (120, 120', 120'') und einen Gegenstand (200), wobei der Körperteil (110) einen trennbaren Körper (112, 112', 112'') aufweist, der mittels des Verriegelungsteils (120, 120', 120'') so daran fixiert ist, dass er davon trennbar ist, und wenn der Verriegelungsteil (120, 120', 120'') durch Ändern der Position des Verriegelungsteils (120, 120', 120'') durch den Gegenstand (200) aus seinem verriegelten Zustand freigegeben wird, der trennbare Körper (112, 112', 112'') getrennt von dem Körperteil (110) gelöst wird, so dass der Körperteil (110), von dem der trennbare Körper (112, 112', 112'') gelöst ist, aufgeklappt wird, um dadurch zu gestatten, dass sich eine äußere Form des Körperteils (110) von einer ersten Form in eine zweite Form verwandelt.

2. Sich verwandelndes Spielzeug nach Anspruch 1, ferner umfassend einen Druckbeaufschlagungsteil (140), der dazu ausgeführt ist, eine Druckkraft zum Druckbeaufschlagen des von dem Körperteil (110) getrennten trennbaren Körpers (112, 112', 112'') bereitzustellen, um zu gestatten, dass der trennbare Körper (112, 112', 112'') in eine willkürliche Richtung bewegt wird, um in einer willkürlichen Richtung drehend getrennt zu werden oder in eine willkürliche Richtung geworfen zu werden, wenn der Verriegelungsteil (120, 120', 120'') aus dem verriegelten Zustand freigegeben wird.

3. Sich verwandelndes Spielzeug nach Anspruch 1 oder 2, wobei der Gegenstand (200) ein magnetisches Material (210) umfasst, das in seinem Inneren angeordnet ist.

4. Sich verwandelndes Spielzeug nach Anspruch 3, ferner umfassend einen magnetischen Teil (130), der dahingehend auf einer Seite des Verriegelungsteils (120) angeordnet ist, zu gestatten, dass sich die Position des Verriegelungsteils (120) durch die Anziehungskraft ändert, die durch das zusammen mit dem in dem Gegenstand (200) angeordneten magnetischen Material (210) erzeugte Magnetfeld verursacht wird, um zu gestatten, dass der Verriegelungsteil (120) aus dem verriegelten Zustand freigegeben wird.

5. Sich verwandelndes Spielzeug nach Anspruch 3, wobei die Position des Verriegelungsteils (120') durch physischen Kontakt mit dem Gegenstand (200) dahingehend geändert wird, aus dem verriegelten Zustand freigegeben zu werden.

6. Sich verwandelndes Spielzeug nach Anspruch 5, ferner umfassend einen magnetischen Teil (130'), der in einem gegebenen Abstand von dem Verriegelungsteil (120') beabstandet angeordnet ist, um durch die Erzeugung des Magnetfelds mit dem in dem Gegenstand (200) angeordneten magnetischen Material (210) an dem Gegenstand (200) befestigt zu werden.

7. Sich verwandelndes Spielzeug nach Anspruch 3, wobei die Position des Verriegelungsteils (120'') durch physischen Kontakt mit dem Gegenstand (200) dahingehend geändert wird, aus dem verriegelten Zustand freigegeben zu werden, und umfassend einen magnetischen Teil (130''), der dahingehend auf einer Seite davon angeordnet ist, gemäß der Änderung der Position des Verriegelungsteils (120'') bewegt zu werden, um zu gestatten, dass der Gegenstand (200) daran befestigt wird.

EP 3 308 841 B1

8. Sich verwandelndes Spielzeug nach Anspruch 1, wobei der Körperteil (110) Folgendes umfasst:

mehrere Körper (111, 113 und 114), die so miteinander gekoppelt sind, dass sie aufgeklappt werden können; und den trennbaren Körper (112, 112', 112''), der mittels des Verriegelungsteils (120, 120', 120'') mit mindestens einem der mehreren Körper (111, 113 und 114) gekoppelt ist, um den Körperteil (110) in der ersten Form zu halten, und trennbar von den mehreren Körpern (111, 113 und 114) gelöst wird, um dem Körperteil (110) zu gestatten, sich durch das Aufklappen der mehreren Körper (111, 113 und 114) zu verwandeln, wenn der Verriegelungsteil (120, 120', 120'') mittels des Gegenstands (200) aus dem verriegelten Zustand freigegeben wird.

9. Sich verwandelndes Spielzeug nach Anspruch 8, wobei der Körperteil (110) ferner einen Figurteil (115) umfasst, der nach außen hin freiliegt, wenn sich der Körperteil (110) in die zweite Form verwandelt.

10. Sich verwandelndes Spielzeug nach Anspruch 8, wobei der trennbare Körper (112, 112', 112'') Folgendes umfasst:

einen ersten trennbaren Körper (112a) mit einem Aufnahmeraum, der dahingehend in seinem Inneren ausgebildet ist, zu gestatten, dass der Verriegelungsteil (120, 120', 120'') darin angeordnet wird; und zweite trennbare Körper (112b), die dahingehend auf beiden Seiten des ersten trennbaren Körpers (112a) angeordnet sind, mit dem ersten trennbaren Körper (112a) drehgekoppelt zu werden.

11. Sich verwandelndes Spielzeug nach Anspruch 8, wobei, wenn der trennbare Körper (112, 112', 112'') von dem Körperteil (110) getrennt und entfernt wird, während der Gegenstand (200) an der Unterseite des trennbaren Körpers (112, 112', 112'') befestigt wird, der trennbare Körper (112, 112', 112'') gestattet, dass die an der Unterseite des trennbaren Körpers (112, 112', 112'') befestigte Unterseite des Gegenstands (200) nach außen hin freigelegt wird.

12. Sich verwandelndes Spielzeug nach Anspruch 1, wobei die zweite Form eine Tier- und/oder eine Roboter- und/oder eine Mensch- und/oder eine Zeichentrickfigurform umfasst.

Revendications

1. Jouet transformable, comprenant une partie de corps (110), une partie de verrouillage (120, 120', 120''), et un article (200),

la partie de corps (110) présentant un corps séparable (112, 112', 112'') fixé à celle-ci au moyen de la partie de verrouillage (120, 120', 120'') de manière à pouvoir en être séparé, et

si la partie de verrouillage (120, 120', 120'') est libérée de son état verrouillé en changeant la position de la partie de verrouillage (120, 120', 120'') par le biais de l'article (200), le corps séparable (112, 112', 112'') étant détaché séparément de la partie de corps (110) de telle sorte que la partie de corps (110) de laquelle est détaché le corps séparable (112, 112', 112'') soit développée de manière à ainsi permettre la transformation d'une forme extérieure de la partie de corps (110) à une deuxième configuration à partir d'une première configuration.

2. Jouet transformable selon la revendication 1, comprenant en outre une partie de pressurisation (140) prévue pour fournir une force de pressurisation pour pressuriser le corps séparable (112, 112', 112'') séparé de la partie de corps (110) pour permettre de déplacer le corps séparable (112, 112', 112'') dans une direction arbitraire, de le séparer par rotation dans une direction arbitraire, ou de le projeter dans une direction arbitraire si la partie de verrouillage (120, 120', 120'') est libérée de l'état verrouillé.

3. Jouet transformable selon la revendication 1 ou 2, dans lequel l'article (200) comprend un matériau magnétique (210) disposé à l'intérieur de celui-ci.

4. Jouet transformable selon la revendication 3, comprenant en outre une partie magnétique (130) disposée d'un côté de la partie de verrouillage (120) de manière à permettre un changement de position de la partie de verrouillage (120) par le biais de la force d'attraction causée par le champ magnétique formé conjointement avec le matériau magnétique (210) disposé à l'intérieur de l'article (200) de manière à permettre à la partie de verrouillage (120) d'être libérée de l'état verrouillé.

5. Jouet transformable selon la revendication 3, dans lequel la position de la partie de verrouillage (120') est changée par le biais du contact physique avec l'article (200) de manière à ce qu'elle soit libérée de l'état verrouillé.

6. Jouet transformable selon la revendication 5, comprenant en outre une partie magnétique (130') disposée de manière espacée de la partie de verrouillage (120') d'une distance donnée de manière à être attachée à l'article (200) par le biais de la formation d'un champ magnétique avec le matériau magnétique (210) disposé à l'intérieur de l'article (200).

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7. Jouet transformable selon la revendication 3, dans lequel la position de la partie de verrouillage (120'') est changée par le biais du contact physique avec l'article (200) de manière à ce qu'elle soit libérée de l'état verrouillé, la partie de verrouillage comprenant une partie magnétique (130'') disposée d'un côté de celle-ci de manière à ce qu'elle soit déplacée en fonction du changement de position de la partie de verrouillage (120'') pour permettre à l'article (200) d'être attaché à celle-ci.

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8. Jouet transformable selon la revendication 1, dans lequel la partie de corps (110) comprend :

une pluralité de corps (111, 113 et 114) accouplés les uns aux autres de manière à pouvoir être développés ; et le corps séparable (112, 112', 112'') accouplé à au moins l'un de la pluralité de corps (111, 113 et 114) au moyen de la partie de verrouillage (120, 120', 120'') de manière à maintenir la partie de corps (110) dans la première configuration, et détaché de manière séparée de la pluralité de corps (111, 113 et 114) de manière à permettre à la partie de corps (110) de se transformer en la deuxième configuration par le biais du développement de la pluralité de corps (111, 113 et 114) si la partie de verrouillage (120, 120', 120'') est libérée de l'état verrouillé au moyen de l'article (200).

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9. Jouet transformable selon la revendication 8, dans lequel la partie de corps (110) comprend en outre une partie de figurine (115) exposée à l'extérieur si la partie de corps (110) se transforme en la deuxième configuration.

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10. Jouet transformable selon la revendication 8, dans lequel le corps séparable (112, 112', 112'') comprend :

un premier corps séparable (112a) ayant un espace de réception formé à l'intérieur de celui-ci de manière à pouvoir y disposer la partie de verrouillage (120, 120', 120'') ; et des deuxièmes corps séparables (112b) disposés des deux côtés du premier corps séparable (112a) de manière à être accouplés de manière rotative au premier corps séparable (112a).

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11. Jouet transformable selon la revendication 8, dans lequel, si le corps séparable (112, 112', 112'') est détaché et enlevé de la partie de corps (110) alors que l'article (200) est attaché au côté inférieur du corps séparable (112, 112', 112''), le corps séparable (112, 112', 112'') permet au côté inférieur de l'article (200) attaché au côté inférieur du corps séparable (112, 112', 112'') d'être exposé à l'extérieur.

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12. Jouet transformable selon la revendication 1, dans lequel la deuxième configuration comprend au moins l'un parmi un animal, un robot, un humain et des configurations de personnages de dessins animés.

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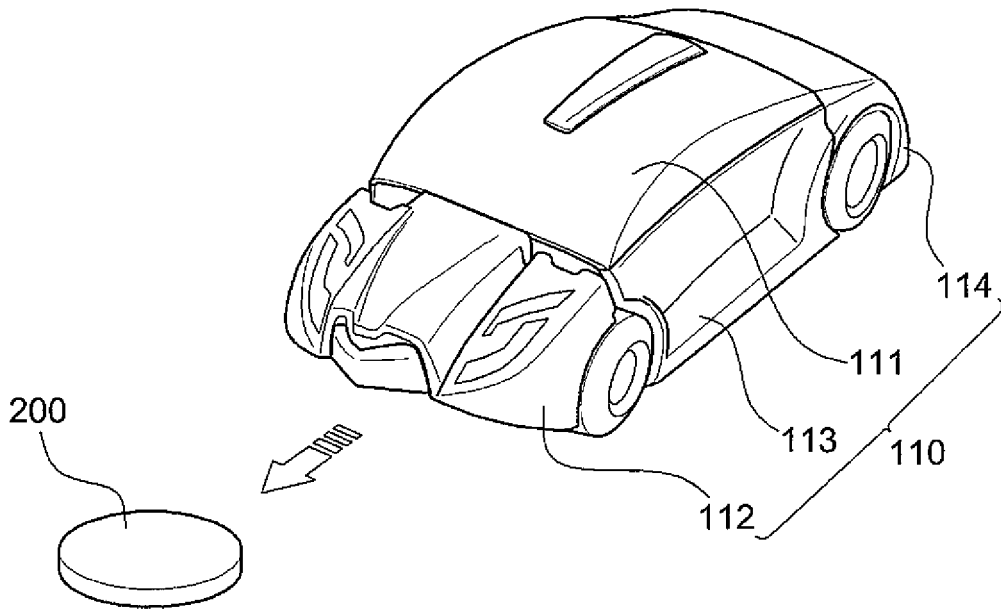


Fig. 1

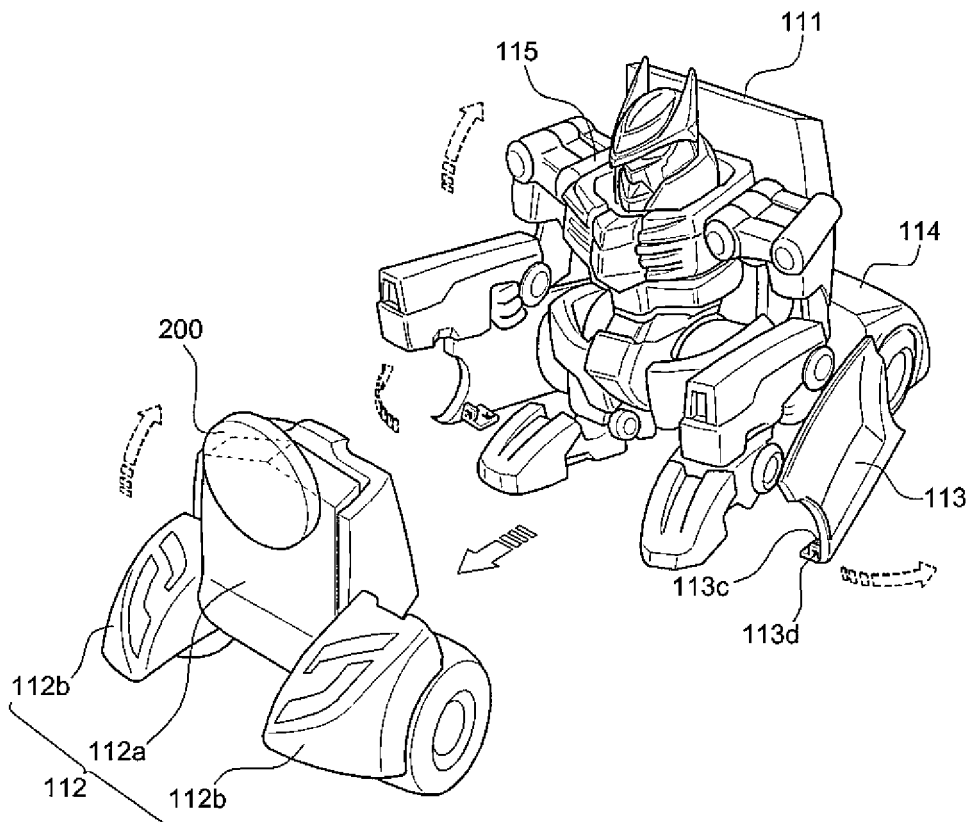


Fig. 2

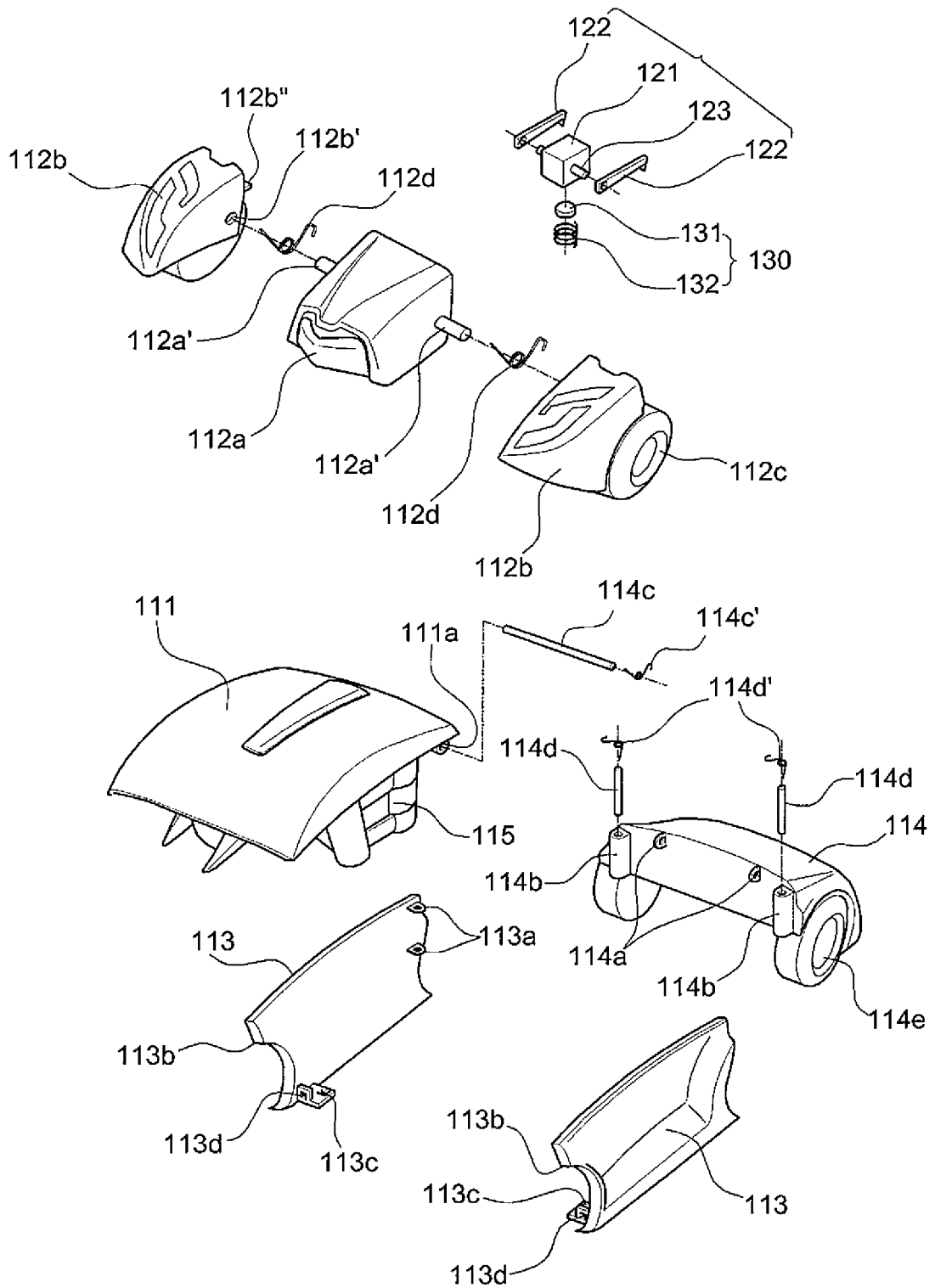


Fig. 3

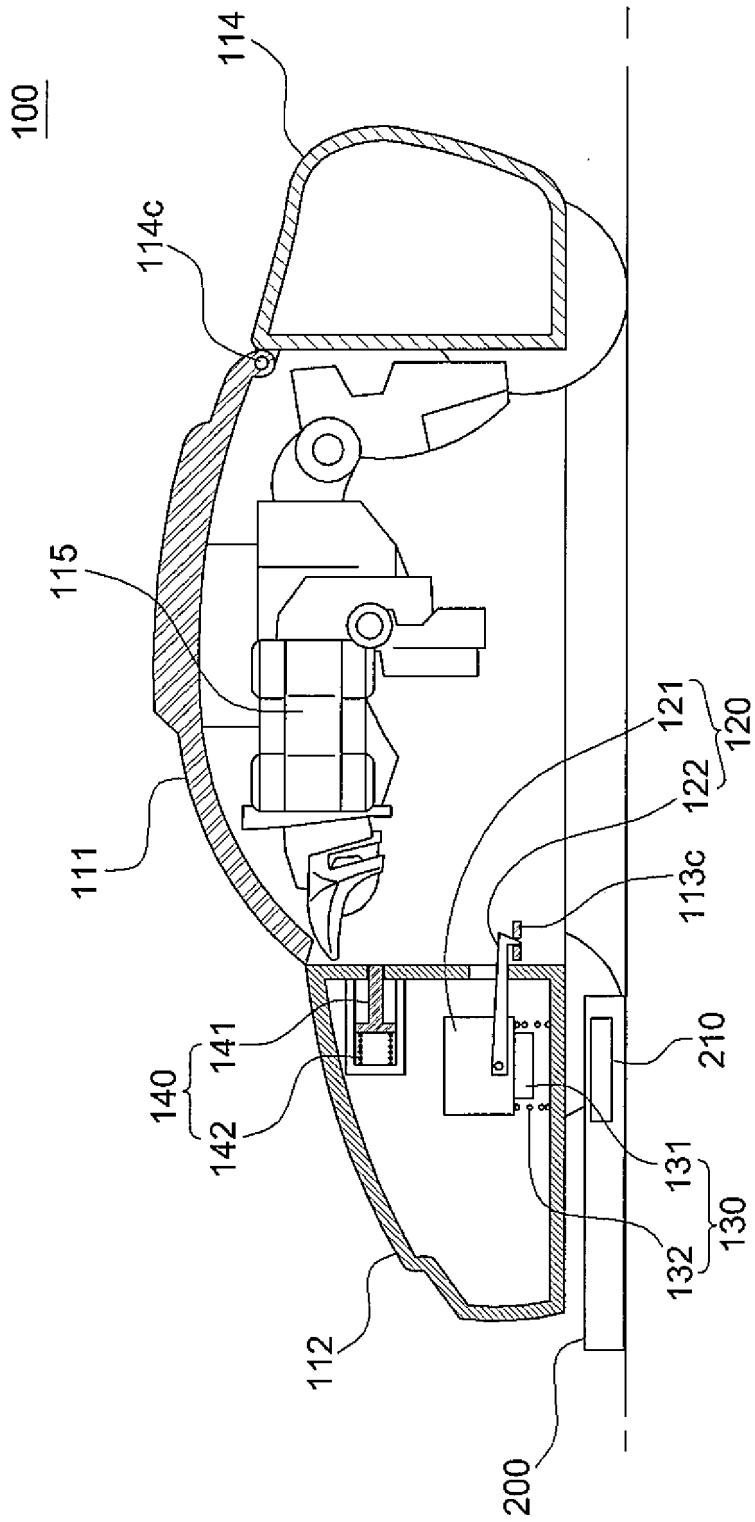


Fig. 4

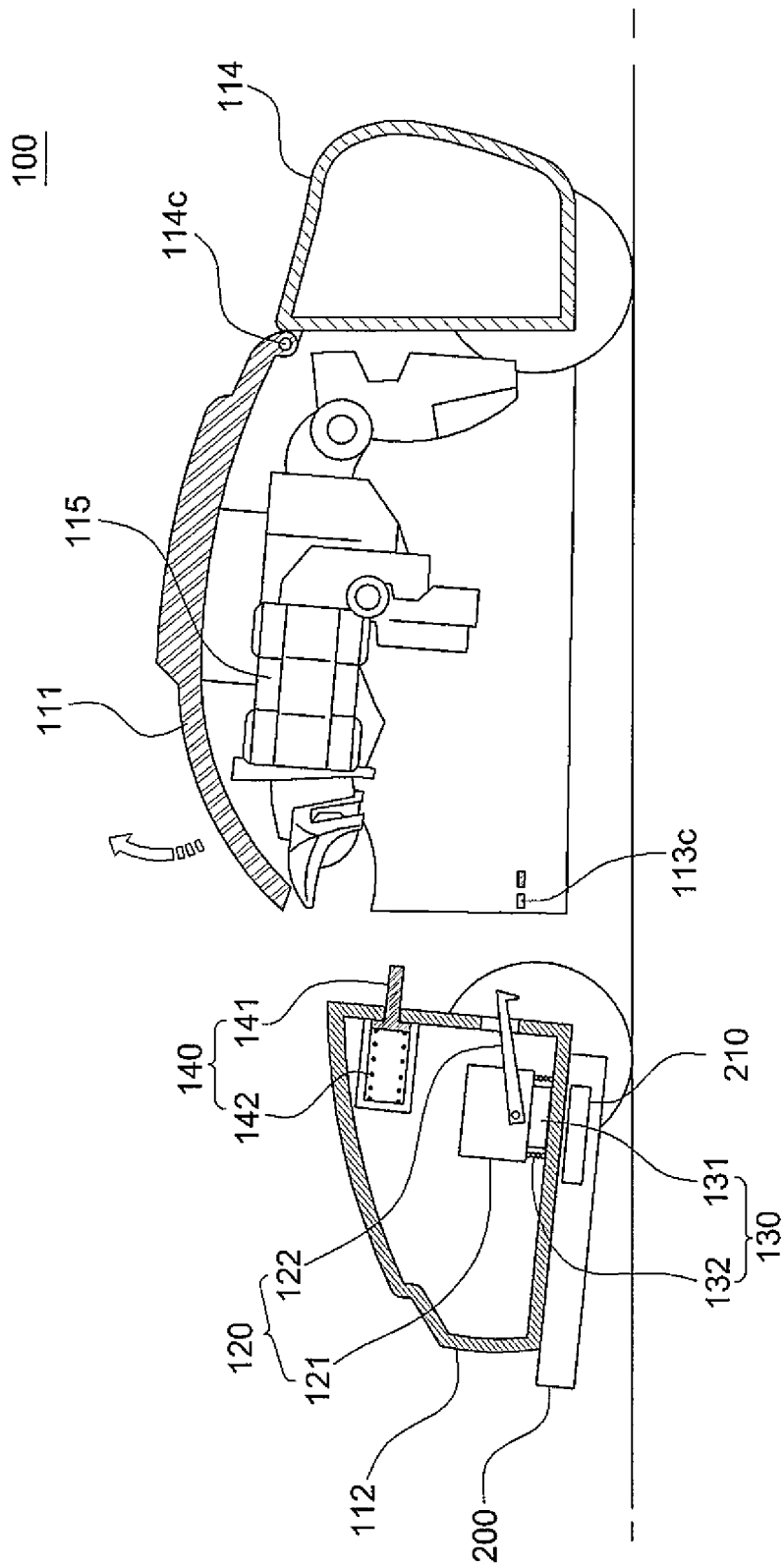


Fig. 5

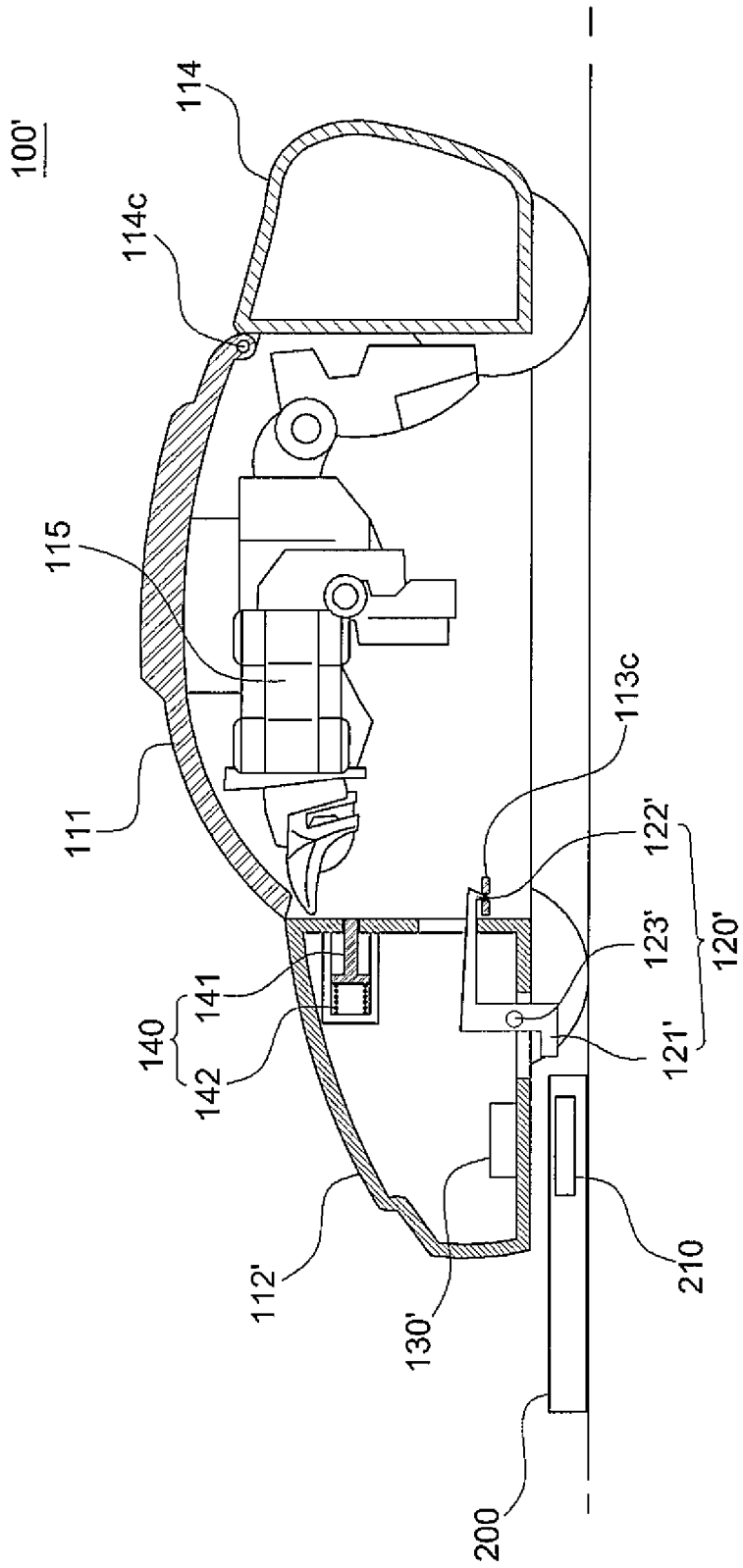


Fig. 6

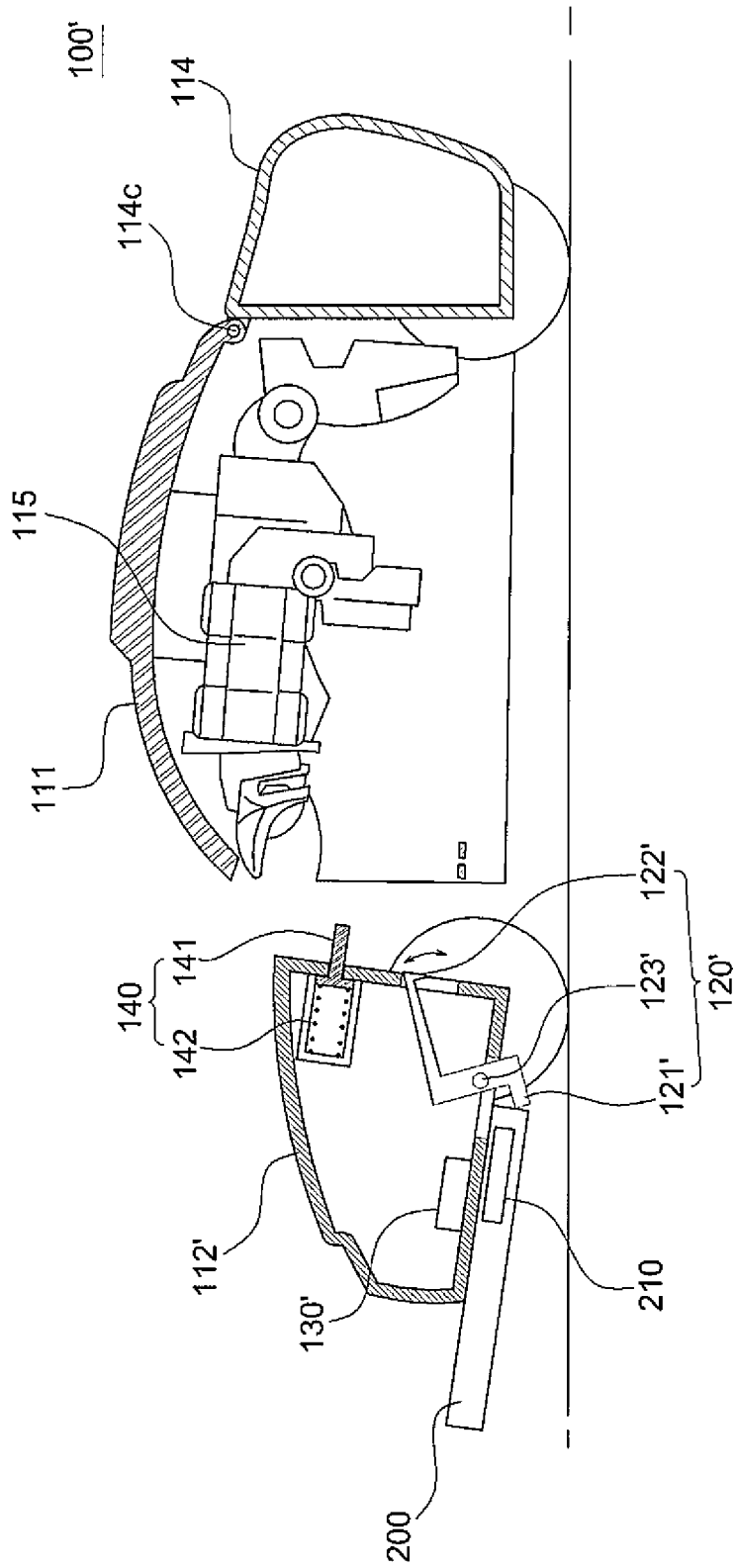


Fig. 7

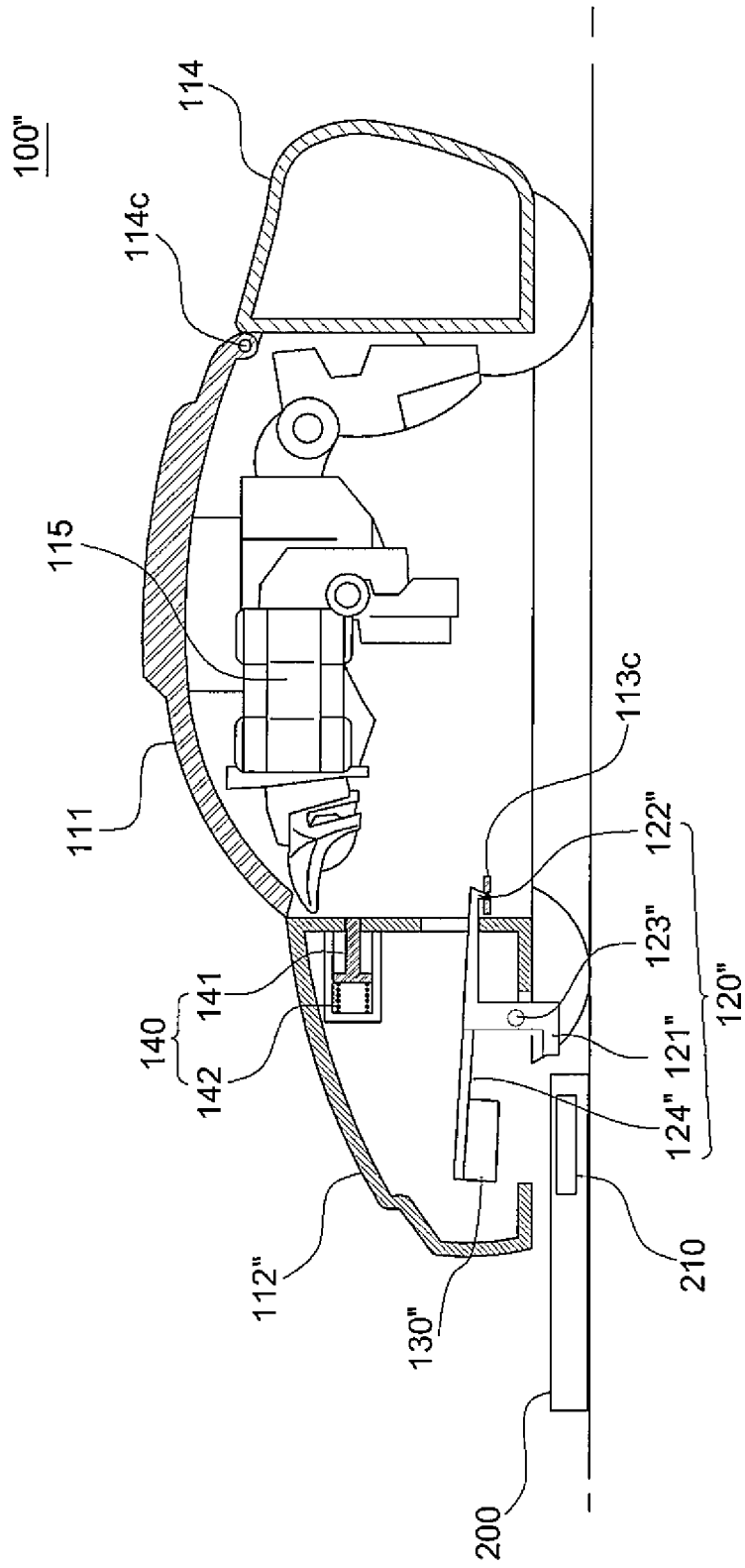


Fig. 8

REFERENCES CITED IN THE DESCRIPTION

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