



(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
18.04.2018 Bulletin 2018/16

(51) Int Cl.:
A63H 17/02 (2006.01) A63H 3/04 (2006.01)

(21) Application number: **16807713.9**

(86) International application number:
PCT/KR2016/005296

(22) Date of filing: **19.05.2016**

(87) International publication number:
WO 2016/200072 (15.12.2016 Gazette 2016/50)

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**
Designated Extension States:
BA ME
Designated Validation States:
MA MD

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(30) Priority: **12.06.2015 KR 20150083293**

(54) **TRANSFORMING TOY**

(57) The purpose of the present invention is to provide a transformable toy, wherein when contact is made with an item arranged at a certain location, the lock state

of a toy having a first form is released, and the toy transforms into a second form with the item.

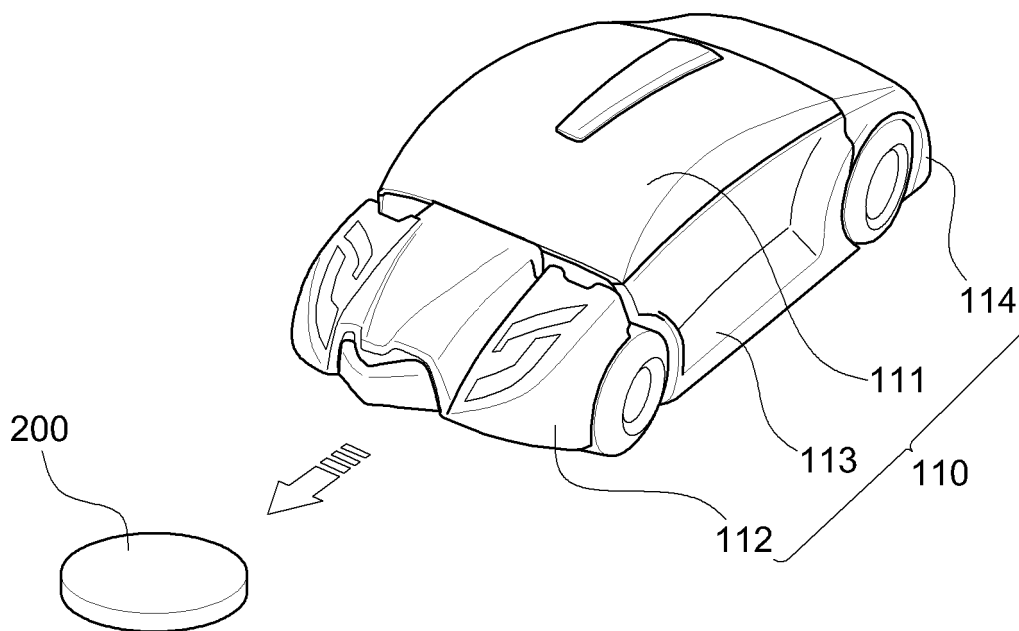


Fig. 1

Description

[Technical Field]

5 **[0001]** The present invention relates to a transformable toy, and more particularly, to a transformable toy that is released from a locked state if the transformable toy having a first form comes into contact with an item disposed on an arbitrary position, so that it transforms into a second form with the item.

[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 released from a locked state thereof through the attractive force of a magnet disposed on the toy car to a magnetic material disposed on the card.

25 **[0007]** If the magnet is detached from the latch of the toy car, however, the toy car does not transform at all.

[Disclosure]

[Technical Problem]

30 **[0008]** 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 transformable toy that is released from a locked state if the transformable toy having a first form comes into contact with an item disposed on an arbitrary position, so that it transforms into a second form with the item.

[Technical Solution]

35 **[0009]** To accomplish the above object, according to the present invention, there is provided a transformable toy including a housing, a latch part, a locking part, and an item, wherein the housing maintains a first form by means of a locked state of the locking part, and if the latch part disposed on the housing comes into contact with the item to allow the locking part to be released from the locked state, the housing is developed to transform into a second form from the first form.

40 **[0010]** According to the present invention, desirably, the housing has an opening formed on one side thereof to allow a portion of the item to be inserted thereinto, so that the inserted item into the housing comes into physical contact with the latch part.

45 **[0011]** According to the present invention, desirably, the item includes a magnetic material disposed at the inside thereof.

[0012] According to the present invention, desirably, the transformable toy further includes a magnet adapted to form a magnetic field together with the magnetic material disposed inside the item to allow the item to be attached to the housing.

50 **[0013]** According to the present invention, desirably, the housing includes first to fifth housings rotatably coupled to each other, and if the locked state of the locking part is released, the first to fifth housings are rotated and developed in at least one direction of upward, downward and lateral directions.

[0014] According to the present invention, desirably, the first to fifth housings include a plurality of shafts adapted to rotatably couple the first to fifth housings to each other by means of hinges; and a plurality of springs adapted to provide rotary forces to allow the first to fifth housings to be rotated around the plurality of shafts.

55 **[0015]** According to the present invention, desirably, the housing includes a bypass tube adapted to discharge the air introduced from the front side in the moving direction of the transformable toy to the front side of the underside of the lower portion of the transformable toy.

[0016] According to the present invention, desirably, the bypass tube is tapered toward an outlet formed on the lower portion of the housing from an inlet formed on the upper portion of the housing.

[0017] According to the present invention, desirably, the latch part includes: a latch part body rotatably disposed on the housing through a latch part rotary shaft in such a manner as to come into contact with the item inserted into the opening; and a locking part driving latch extended by a given length from the latch part body in such a manner as to be connected to the locking part to allow the locking part to be changed in position and moved according to the rotation of the latch part body.

[0018] According to the present invention, desirably, the latch part further includes an item fixing latch disposed on the latch part body in such a manner as to allow the item inserted into the opening to come into close contact with the housing according to the rotation of the latch part body.

[0019] According to the present invention, desirably, the locking part includes: a locking part latch disposed on top of the latch part in such a manner as to be cooperatively operated with the latch part, the locking part latch having locking protrusions formed on both side ends thereof in such a manner as to be engaged with the housing to allow the housing to be maintained to the first form; and locking part springs adapted to provide elastic forces to allow the locking part latch to be maintained at a given position.

[0020] According to the present invention, desirably, the transformable toy further includes a base adapted to support the item to a height spaced apart from the ground by a given distance.

[Advantageous Effects]

[0021] According to the present invention, the transformable toy is released from the locked state thereof through the physical contact with the item, so that the durability of the transformable toy can be improved.

[Description of Drawings]

[0022]

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

FIG.2 is an exploded perspective view showing the transformable toy of FIG.1.

FIG.3 is a sectional view showing the transformable toy of FIG.1.

FIGS.4a and 4b are sectional views showing the operating processes of a latch part of the transformable toy of FIG.1.

FIG.5 is a perspective view showing the transforming process of the transformable toy of FIG.1.

FIG.6 is a perspective view showing a transformable toy according to a second embodiment of the present invention.

FIG.7 is a sectional view showing one operation process of the transformable toy of FIG.6.

FIG.8 is a sectional view showing another operation process of the transformable toy of FIG.6.

[Mode for Invention]

[0023] Hereinafter, an explanation on a transformable toy according to the present invention will be in detail given with reference to the attached drawing.

(First Embodiment)

[0024] FIG.1 is a perspective view showing a transformable toy according to a first embodiment of the present invention, FIG.2 is an exploded perspective view showing the transformable toy of FIG.1, FIG.3 is a sectional view showing the transformable toy of FIG.1, FIGS.4a and 4b are sectional views showing the operating processes of a latch part of the transformable toy of FIG.1, and FIG.5 is a perspective view showing the transforming process of the transformable toy of FIG.1.

[0025] As shown in FIGS.1 to 5, a transformable toy 100 according to a first embodiment of the present invention includes a housing 110, a latch part 120, a locking part 130, a magnet 140, and an item 200, wherein the housing 110 maintains a first form by means of a locked state of the locking part 130, and if the latch part 120 disposed on the housing 110 comes into contact with the item 200 to allow the locking part 130 to be released from the locked state, the housing 110 is developed to transform into a second form from the first form.

[0026] If the transformable toy 100 according to the present invention is moved or driven to the item 200 disposed at an arbitrary position, in more detail, the transformable toy 100 comes into contact with the item 200 to allow the latch part 120 to be operated, so that the locking part 130 is released from the locked state thereof to permit the external form of the transformable toy 100 to transform into the second form from the first form.

[0027] According to the present invention, further, the first form of the transformable 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.

[0028] According to the present invention, the first form of the transformable toy 100 is the form of a car, for the brevity of the description, but of course, it may have all movable or drivable forms.

[0029] The housing 110 has a first housing 110a, a second housing 110b, a third housing 110c, fourth housings 110d, and a fifth housing 110e, and the first to fifth housings 110a to 110e are rotatably coupled to each other. If the locked state of the locking part 130 is released, the first to fifth housings 110a to 110e are rotated and developed in at least one direction of upward, downward and lateral directions around the ground on the figures.

[0030] Moreover, the housing 110 has an opening 110e' formed on the lower portion of one side thereof to allow a portion of the item 200 located on the ground to be inserted therinto, so that the inserted item 200 into the housing 110 comes into physical contact with the latch part 120.

[0031] The first housing 110a is a hood part located at the front side of the car and has an accommodation space formed at the inside thereof in such a manner as to be open on the lower portion thereof to allow the latch part 120 and the locking part 130 to be disposed therein. The first housing 110a has a first housing hinge 111a disposed on one side thereof in such a manner as to be rotatably connected to the second housing 110b, guides 112a protruding inwardly therefrom by a given length to guide and move the locking part 130 in upward and downward directions, and first housing through holes 113a formed on both sides of the side surfaces thereof in such a manner as to pass a portion of the locking part 130 therethrough.

[0032] The second housing 110b is a body frame part located at the center of the car and has second housing first hinges 111b located on one side thereof in such a manner as to be coupled to the first housing 110a through a second housing first shaft 113b and second housing second hinges 112b located on the other side thereof in such a manner as to be coupled to the third housing 110c through a second housing second shaft 115b.

[0033] Further, the second housing first shaft 113b and the second housing second shaft 115b have a second housing first spring 114b and a second housing second spring 116b fitted thereon to allow rotary forces with elastic forces to be provided so that the first housing 110a and the second housing 110b are rotated and developed upwardly.

[0034] Furthermore, the second housing 110b has the character 117b disposed on the underside thereof in such a manner as to be exposed to the outside when the transformable toy 100 transforms into the second form.

[0035] The third housing 110c is a trunk part located at the rear side of the car and has a third housing first hinge 111c disposed on one side thereof in such a manner as to be rotatably connected to the second housing 110b and third housing second hinges 112c disposed on both sides thereof in a vertical direction to the third housing first hinge 111c in such a manner as to be rotatably connected to the fourth housings 110d.

[0036] Also, the third housing 110c has rear wheels 113c disposed on both sides thereof and a support rod 114c disposed on the rear side thereof in such a manner as to protrude outwardly therefrom by a given length, so that in the process where the transformable toy 100 transforms into the second form from the first form, the third housing 110c supports the transformable toy 100, thereby preventing the transformable toy 100 from falling backwardly due to the rotational inertial force generated from the rotation and development of the first housing 110a and the second housing 110b.

[0037] The fourth housings 110d are side frames inclusive of at least one of a fender and a door of the car, and each fourth housing 110d has fourth housing hinges 111d disposed on one side thereof in such a manner as to be rotatably connected to the third housing 110c through a fourth housing shaft 114d and a front wheel 112d disposed on the other side thereof.

[0038] Further, each fourth housing 110d has a locking protrusion 113d formed on the inner surface thereof in such a manner as to be selectively coupled to the locking part 130 according to the operation of the locking part 130 disposed in the first housing 110a, so that the locking protrusion 113d is locked onto the locking part 130 to allow the transformable toy 100 to be maintained to the first form or it is separated from the locking part 130 in such a manner as to be released from the locked state thereof.

[0039] Also, each fourth housing 110d has fourth housing springs 115d fitted to the fourth housing hinges 111d in such a manner as to provide elastic forces to allow the fourth housing 110d to be rotatably developed around the fourth housing shaft 114d.

[0040] The fifth housing 110e is located on the lower portion of the first housing 110a and has a sectional shape of "○" having the opening 110e' formed on one side thereof in such a manner as to insert the item 200 therinto and a fifth housing hinge 111e disposed on the upper portion thereof to support the latch part 120 so that the latch part 120 is rotatably disposed thereon.

[0041] In the first embodiment of the present invention, for the brevity of the description, the fifth housing 110e is separately provided from the first housing 110a, but of course, it may be formed unitarily with the first housing 110a.

[0042] If the transformable toy 100 is moved forwardly, further, the fifth housing 110e has a bypass tube 112e adapted to discharge the air introduced from the front side in the moving direction of the transformable toy 100 to the front side

of the underside of the transformable toy 100.

[0043] The bypass tube 112e is formed along the inner surface of the fifth housing 110e and has an inlet 113e formed on the upper portion of the fifth housing 110e and an outlet 114e formed on the lower portion of the fifth housing 110e. The bypass tube 112e is desirably tapered toward the outlet 114c from the inlet 113c to increase the pressure of the introduced air, thereby discharging the air to the outside.

[0044] The air discharged to the front side of the lower portion of the transformable toy 100 through the bypass tube 112e serves as a lifting force capable of allowing a portion of the item 200 to lift upwardly if the transformable toy 100 is moved to the item 200 located on the ground (or floor).

[0045] That is, the air discharged through the bypass tube 112e lifts a portion of the front side of the item 200 located on the ground, so that the item 200 can be more accurately inserted into the opening 110e'.

[0046] In the first embodiment of the present invention, for the brevity of the description, the housing 110 is divided into the first to fifth housings 110a to 110e, and the transforming toy 100 transforms into the second form through the rotation and development of the first to fifth housings 110a to 110e in vertical and horizontal directions thereof. However, it is obvious that the first embodiment of the present invention is not limited thereto, while being carried out through the design changes in the number of housings, the shapes of housings, the coupling relations of housings, and the transforming directions of housings.

[0047] The latch part 120 is configured to detect whether the item 200 is inserted into the opening 110e' and to be operated if the item 200 is inserted into the opening 110e' to allow the locking part 130 to be changed in position, and the latch part 120 includes a latch part body 121, a locking part driving latch 122, and an item fixing latch 123.

[0048] The latch part body 121 has one side protruding therefrom toward the opening 110e' of the fifth housing 110e and the other side rotatably disposed on the fifth housing hinge 111e of the fifth housing 110e through a latch part rotary shaft 121a, so that the latch part body 121 comes into contact with the item 200 inserted into the opening 110e' to allow the locking part driving latch 122 to be rotated around the latch part rotary shaft 121a.

[0049] The locking part driving latch 122 is changed in position according to the operation of the latch part body 121 to allow the locking part 130 to pressurizingly move upwardly on the figures, and the locking part driving latch 122 protrudes by a given length from the other side of the latch part body 121.

[0050] The item fixing latch 123 protrudes by a given length from the other side of the latch part body 121, and if the latch part body 121 is rotated in a counterclockwise direction on the figures and thus changed in position through the contact with the item 200, the item fixing latch 123 comes into contact with top of the item 200 to allow the item 200 to be brought into close contact with the fifth housing 110e.

[0051] That is, the item fixing latch 123 comes into contact with the item 200 inserted into the opening 110e', and thus, the item 200 is brought into fixedly close contact with the housing 110, so that during the transforming process of the transformable toy 100, the item 200 is not separated from the housing 110.

[0052] The locking part 130 is changed in position according to the operation of the latch part 120 and maintains the locked state so that the first to fifth housing 110a to 110e are kept to the first form, and the locking part 130 includes a locking part latch 131, locking part through holes 132, and locking part springs 133.

[0053] The locking part latch 131 is located on top of the latch part 120 in such a manner as to be changed upwardly and downwardly through the cooperative operation with the latch part 120 and is extended by a given length from a body of the locking part 130, while having locking protrusions 131a formed on both side ends thereof in such a manner as to be engaged with the locking protrusions 113d of the fourth housings 110d to allow the housing 110 to be maintained to the first form.

[0054] At least one or more locking part through holes 132 are formed to pass through the body of the locking part 130, so that the guides 112a formed on the first housing 110a pass through the locking part through holes 132 to allow the locking part 130 to be changed upwardly and downwardly along the guides 112a according to the operation of the latch part 120.

[0055] The locking part springs 133 are mounted on the guides 112a to provide elastic forces so that the locking part 130 can be maintained at a given position.

[0056] That is, the locking part springs 133 pressurize the locking part 130 to allow the latch part 120 and the locking part 130 to be maintained at their given position, and if the locking part 130 is changed upwardly through the operation of the latch part 120, the locking part springs 133 provide the elastic forces in the downward direction to allow the locking part 130 to be returned to its original position.

[0057] The magnet 140 forms a magnetic field together with a magnetic material 210 disposed inside the item 200 to allow the item 200 to be more easily attached to the housing 110, and the magnet 140 is disposed on the fifth housing 110e to form an attractive force caused by the magnetic field formed together with the magnetic material 210 of the item 200 inserted into the opening 110e', so that it is attached to the item 200.

[0058] In the first embodiment of the present invention, the magnet 140 is adopted, but of course, an adhesive having an adhesive component bondable to a given object or an adhesive having a given frictional coefficient capable of preventing slipping from an object may be of course adopted.

[0059] 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 takes a shape of a card having coated external surfaces and 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 140.

[0060] 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.

[0061] Next, an explanation on the operation process of the transformable toy 100 according to the first embodiment of the present invention will be given.

[0062] The transformable toy 100 moves to the item 200 disposed on the ground in the state where it is kept to the first form at the locked state through the coupling between the locking protrusions 113d of the housing 110 and the locking part 130.

[0063] If the transformable toy 100 is driven to the item 200, air is introduced into the opening 110e' formed on the front side of the transformable toy 100, and the air introduced into the opening 110e' is discharged to the front side of the lower portion of the transformable toy 100 through the bypass tube 112e.

[0064] If the transformable toy 100 is close to the item 200, a portion of the item 200 lifts upwardly from the ground by means of the air discharged through the bypass tube 112e, and the lifted portion of the item 200 is inserted into the opening 110e' of the transformable toy 100.

[0065] The item 200 inserted into the opening 110e' pushes the latch part 120, and the latch part 120 is rotated by means of the item 200 to allow the locking part driving latch 122 and the item fixing latch 123 to be operated.

[0066] The locking part 130 moves upwardly along the guides 112a through the operation of the locking part driving latch 122 to permit the locking protrusions 131a of the locking part 130 and the locking protrusions 113d of the fourth housings 110d to be separated from each other, so that the locking part 130 is released from the locked state thereof.

[0067] If the locking part 130 is released from the locked state thereof through the separation from the locking protrusions 113d of the fourth housings 110d, the fourth housings 110d are rotated horizontally and open around the fourth housing shafts 114d by means of the elastic forces of the fourth housing springs 115d, and the first housing 110a and the second housing 110b engagedly coupled with the fourth housings 110d are rotated upwardly and developed in the vertical direction to the second housing first and second shafts 113b and 115b of the second housing 110b by means of the elastic forces of the second housing first and second springs 115b and 116b, so that the transformable toy 100 transforms into the second form taking a form of a robot standing up.

[0068] On the other hand, the item 200 is fixed to the inner side of the fifth housing 110e through the close contact with the item fixing latch 123, so that in the process where the transformable toy 100 transforms into the second form from the first form, the item 200 is not separated from the housing 110.

[0069] Further, the item 200 is more rigidly attached to the housing 110 by means of the attractive force generated by the magnetic field formed between the magnet 140 and the magnetic material 210 disposed inside the item 200, without any separation from the housing 110.

[0070] If the transforming process of the transformable toy 100 into the second form from the first form is finished, accordingly, the item 200 separately disposed from the ground transforms into the second form, together with the transformable toy 100, in such a manner as to allow the underside surface thereof to be exposed to the outside.

(Second Embodiment)

[0071] FIG.6 is a perspective view showing a transformable toy according to a second embodiment of the present invention, FIG.7 is a sectional view showing one operation process of the transformable toy of FIG.6, and FIG.8 is a sectional view showing another operation process of the transformable toy of FIG.6.

[0072] As shown in FIGS.6 to 8, a transformable toy 100 according to a second embodiment of the present invention is differently configured from the transformable toy 100 according to the first embodiment of the present invention in that it is provided with a base 300.

[0073] The base 300 is adapted to support the item 200 to a height spaced apart from the ground by a given distance and includes an item seating portion 310.

[0074] In more detail, the base 300 has the item seating portion 310 formed on the top portion thereof in such a manner as to have the corresponding shape to the outer shape of the item 200, and a portion of the item 200 is seated on the item seating portion 310 in such a manner as to be supported to the position spaced apart from the ground by the given distance thereagainst, so that the item 200 can be more easily insertedly coupled to the opening 110e' of the transformable toy 100.

[0075] Further, the base 300 includes a slip prevention material (not shown) disposed on the underside thereof, and the slip prevention material is made of rubber to increase a frictional force against the ground.

[0076] Accordingly, the transformable toy is released from the locked state thereof through the physical contact with

the item.

[0077] 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 and spirit of the present invention.

[0078] 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

100: transformable toy	110: housing
110a: first housing	111a: first housing hinge
112a: guide	113a: first housing through hole
110b: second housing	111b: second housing first hinge
112b: second housing second hinge	
113b: second housing first shaft	
114b: second housing first spring	
115b: second housing second shaft	
116b: second housing second spring	
117b: character	
110c: third housing	111c: third housing first hinge
112c: third housing second hinge	113c: rear wheel
114c: support rod	110d: fourth housing
111d: fourth housing hinge	112d: front wheel
113d: locking protrusion	114d: fourth housing shaft
115d: fourth housing spring	110e: fifth housing
110e': opening	111e: fifth housing hinge
112e: bypass tube	113e: inlet
114e: outlet	120: latch part
121: latch part body	121a: latch part rotary shaft
122: latch part driving latch	123: item fixing latch
130: locking part	131: locking part latch
131a: locking protrusion	132: locking part through hole
133: locking part spring	140: magnet
200: item	210: magnetic material
300: base	310: item seating portion

Claims

1. A transformable toy comprising a housing 110, a latch part 120, a locking part 130, and an item 200, wherein the housing 110 maintains a first form by means of a locked state of the locking part 130, and if the latch part 120 disposed on the housing 110 comes into contact with the item 200 to allow the locking part 130 to be released from the locked state, the housing 110 is developed to transform into a second form from the first form.
2. The transformable toy according to claim 1, wherein the housing 110 has an opening 110e' formed on one side thereof to allow a portion of the item 200 to be inserted therinto, so that the inserted item 200 into the housing 110 comes into physical contact with the latch part 120.
3. The transformable toy according to claim 1 or 2, wherein the item 200 comprises a magnetic material 210 disposed at the inside thereof.
4. The transformable toy according to claim 3, further comprising a magnet 140 adapted to form a magnetic field together with the magnetic material 210 disposed inside the item 200 to allow the item 200 to be attached to the housing 110.

5. The transformable toy according to claim 1, wherein the housing 110 comprises first to fifth housings 110a to 110e rotatably coupled to each other, and if the locked state of the locking part 130 is released, the first to fifth housings 110a to 110e are rotated and developed in at least one direction of upward, downward and lateral directions.

6. The transformable toy according to claim 5, wherein the first to fifth housings 110a to 110e comprise a plurality of shafts 113b, 115b, and 114d adapted to rotatably couple the first to fifth housings 110a to 110e to each other by means of hinges; and a plurality of springs 114b, 116b, and 115d adapted to provide rotary forces to allow the first to fifth housings 110a to 110e to be rotated around the plurality of shafts 113b, 115b, and 114d.

7. The transformable toy according to claim 5, wherein the housing 110 comprises a bypass tube 112e adapted to discharge the air introduced from the front side in the moving direction of the transformable toy to the front side of the underside of the lower portion of the transformable toy.

8. The transformable toy according to claim 7, wherein the bypass tube 112e is tapered toward an outlet 114c formed on the lower portion of the housing 110 from an inlet 113c formed on the upper portion of the housing 110.

9. The transformable toy according to claim 2, wherein the latch part 120 comprises:

a latch part body 121 rotatably disposed on the housing 110 through a latch part rotary shaft 121a in such a manner as to come into contact with the item 200 inserted into the opening 110e'; and
a locking part driving latch 122 extended by a given length from the latch part body 121 in such a manner as to be connected to the locking part 130 to allow the locking part 130 to be changed in position and moved according to the rotation of the latch part body 121.

10. The transformable toy according to claim 9, wherein the latch part 120 further comprises an item fixing latch 123 disposed on the latch part body 121 in such a manner as to allow the item 200 inserted into the opening 110e' to come into close contact with the housing 110 according to the rotation of the latch part body 121.

11. The transformable toy according to claim 2, wherein the locking part 130 comprises:

a locking part latch 131 disposed on top of the latch part 120 in such a manner as to be cooperatively operated with the latch part 120, the locking part latch 131 having locking protrusions 131a formed on both side ends thereof in such a manner as to be engaged with the housing 110 to allow the housing 110 to be maintained to the first form; and
locking part springs 133 adapted to provide elastic forces to allow the locking part latch 131 to be maintained at a given position.

12. The transformable toy according to any one of claims 1 to 11, further comprising a base 300 adapted to support the item 200 to a height spaced apart from the ground by a given distance.

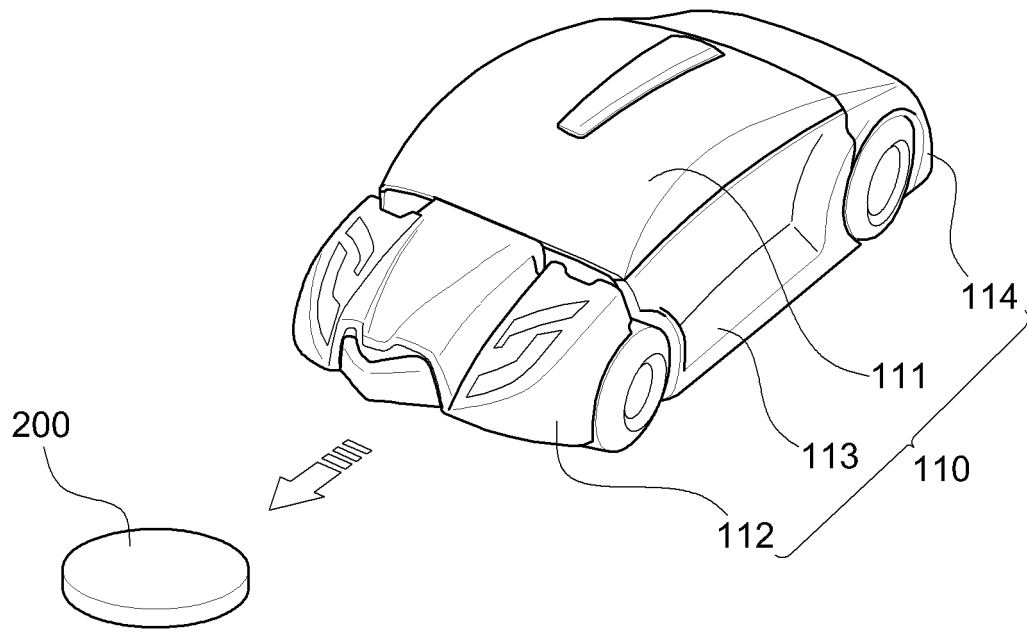


Fig. 1

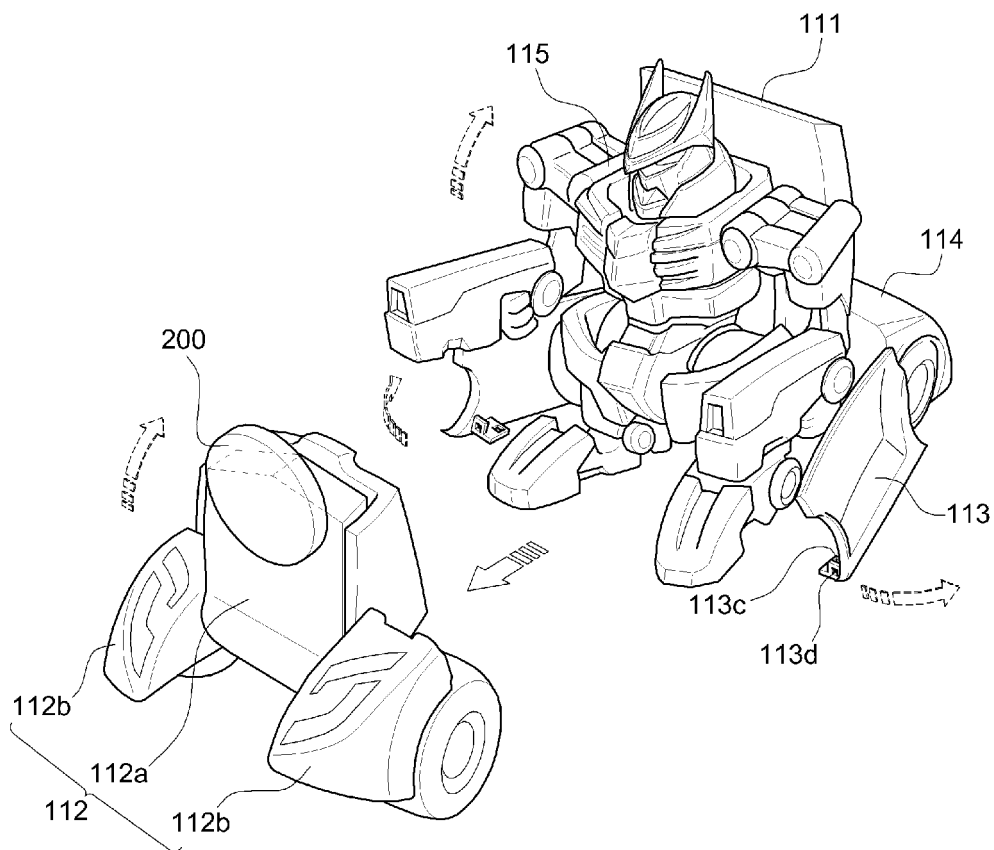


Fig. 2

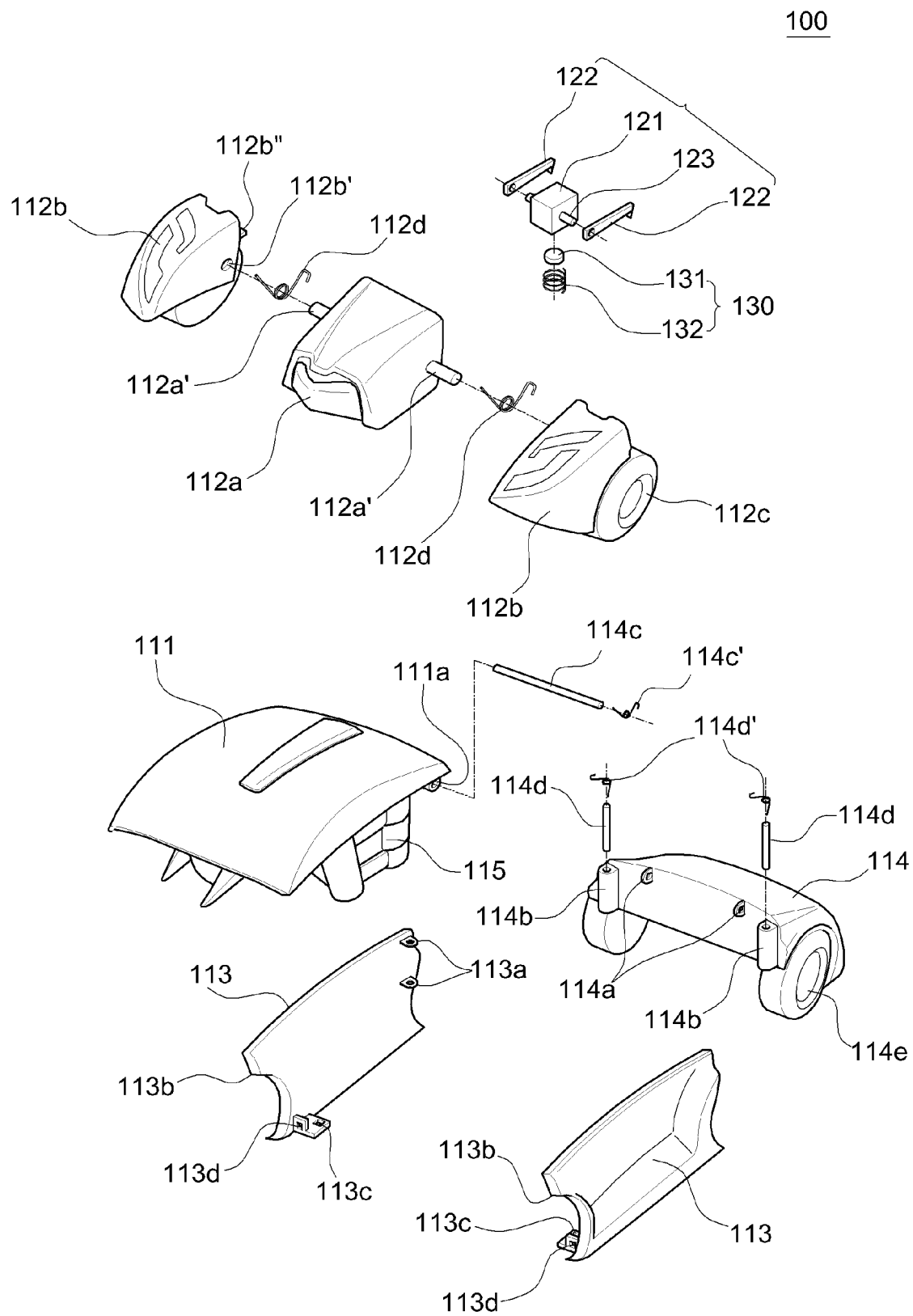


Fig. 3

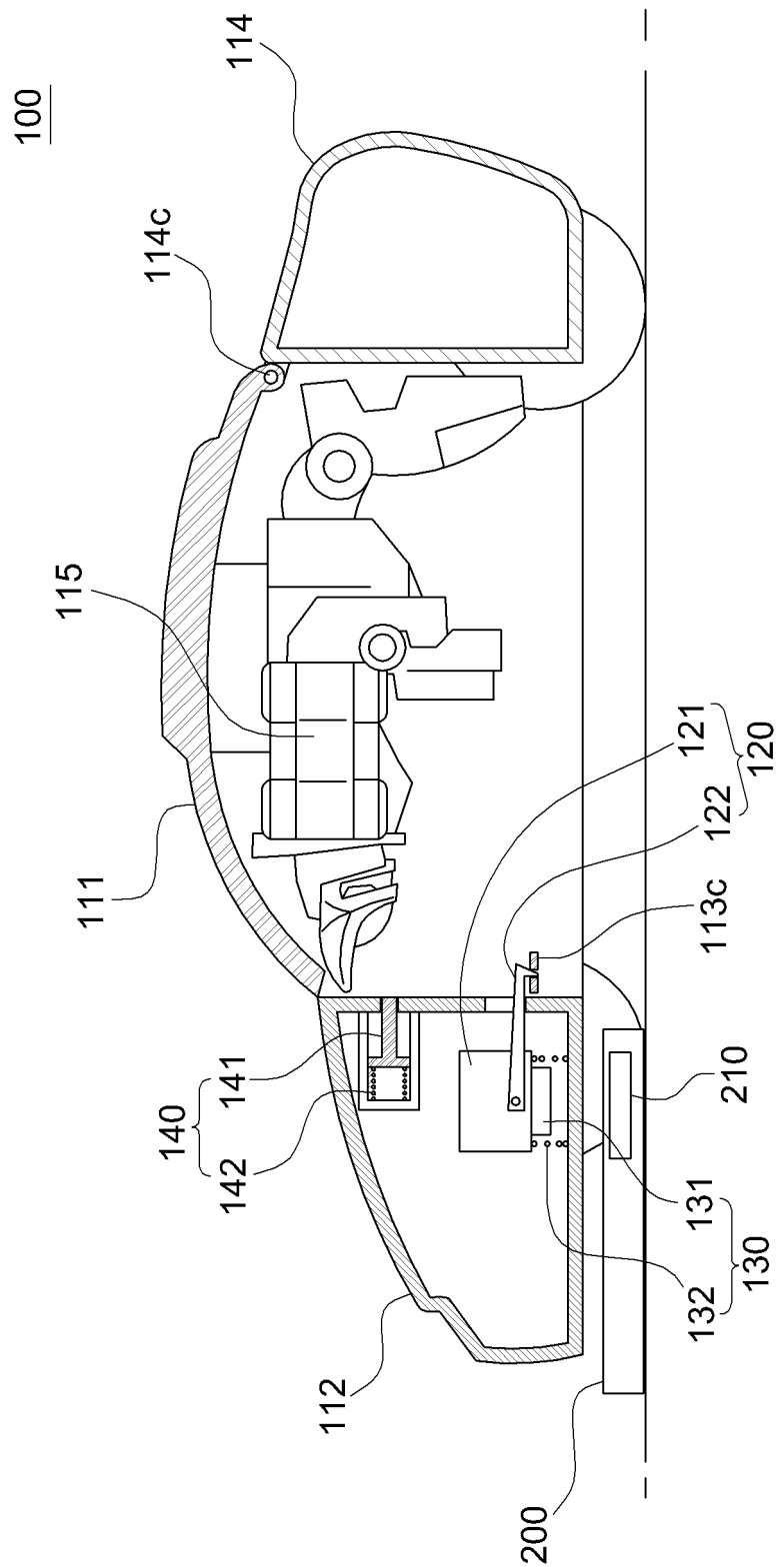


Fig. 4

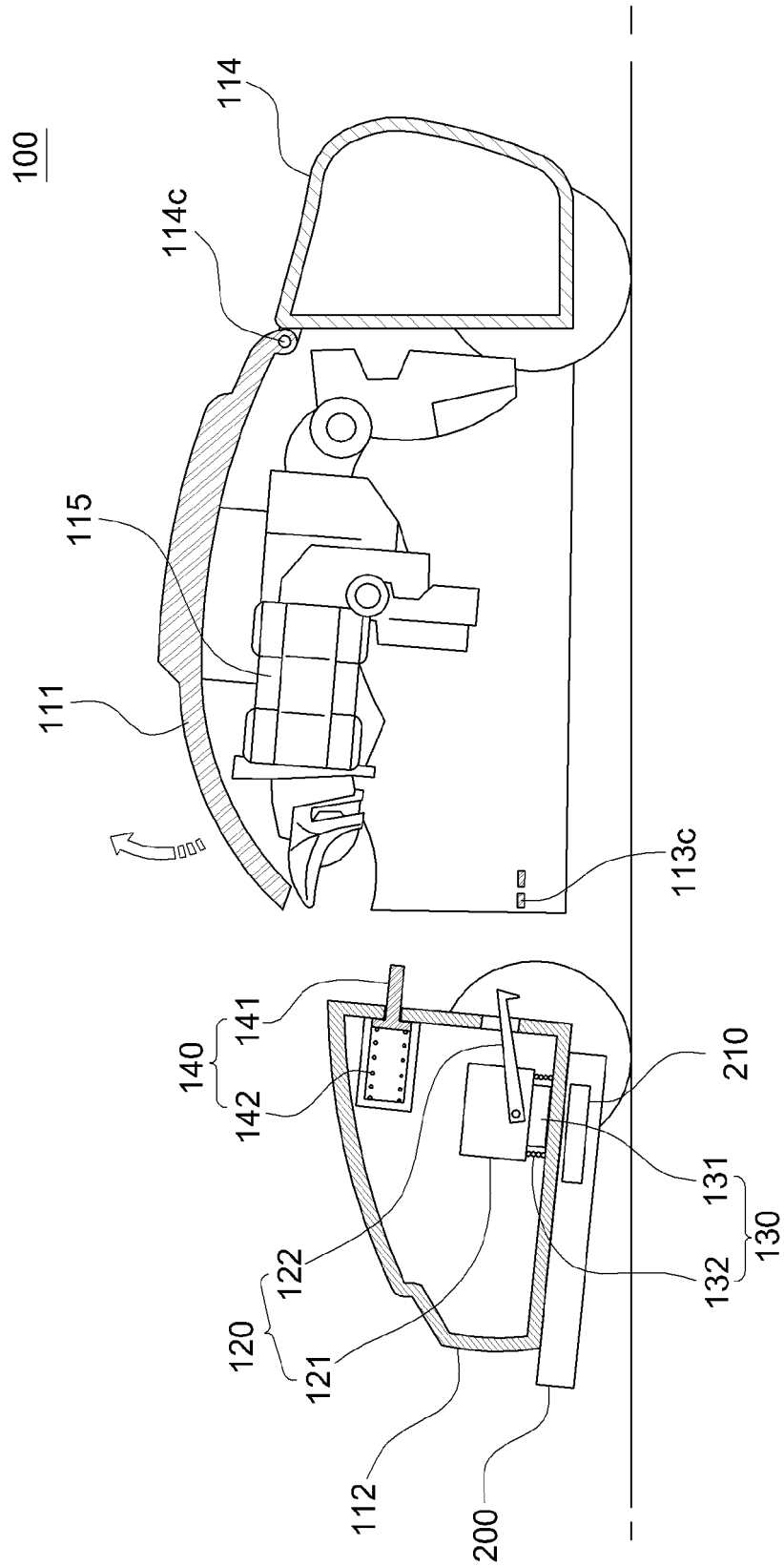


Fig. 5

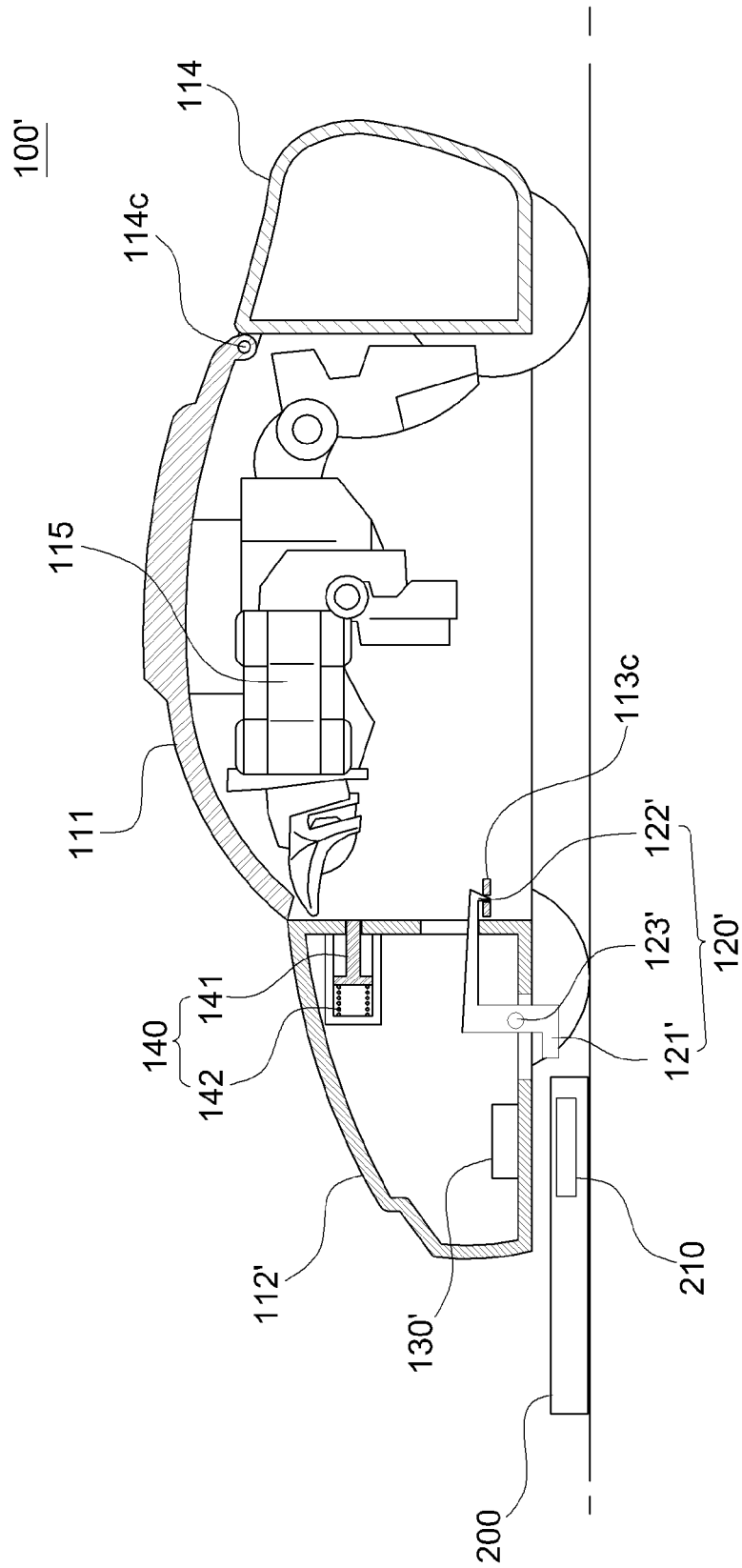


Fig. 6

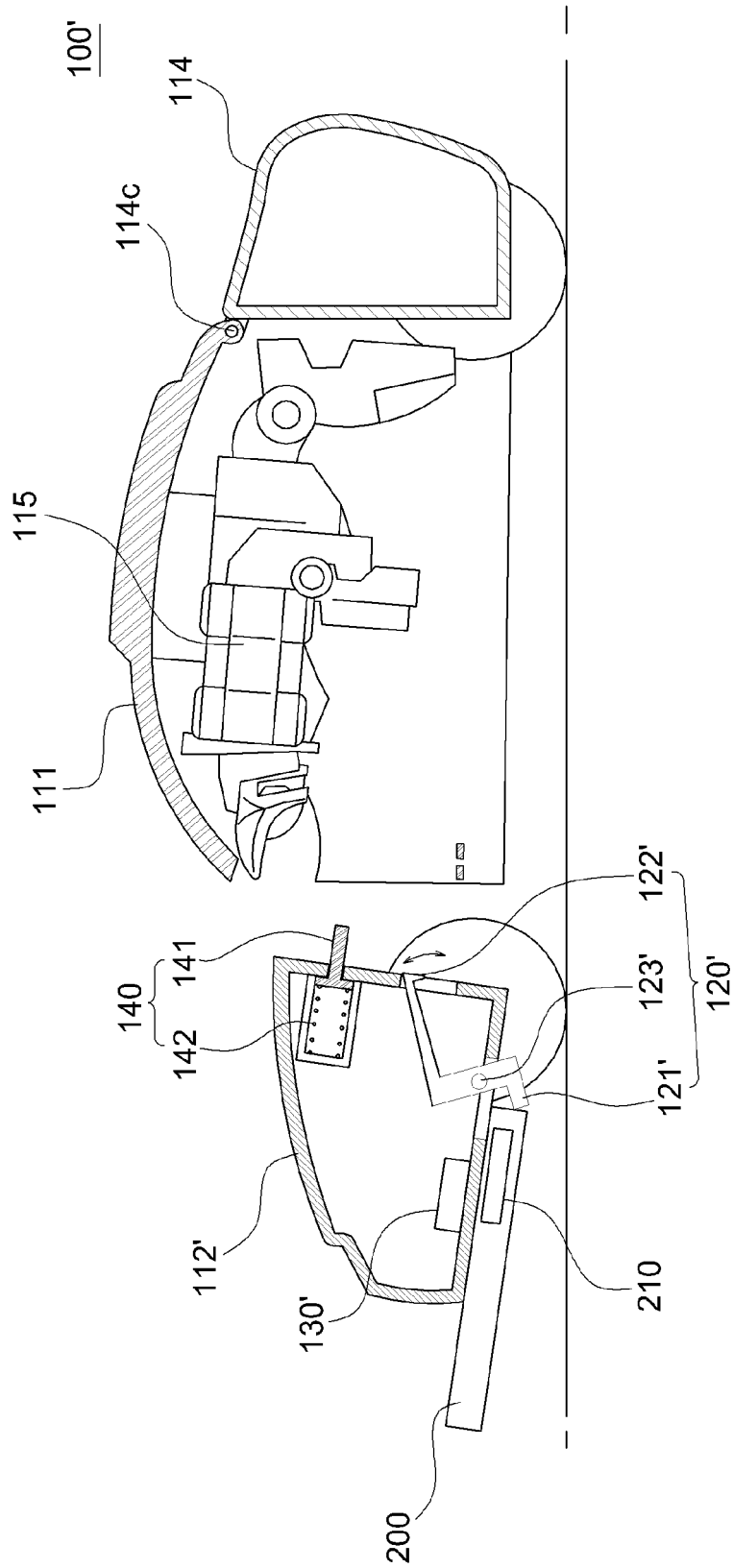


Fig. 7

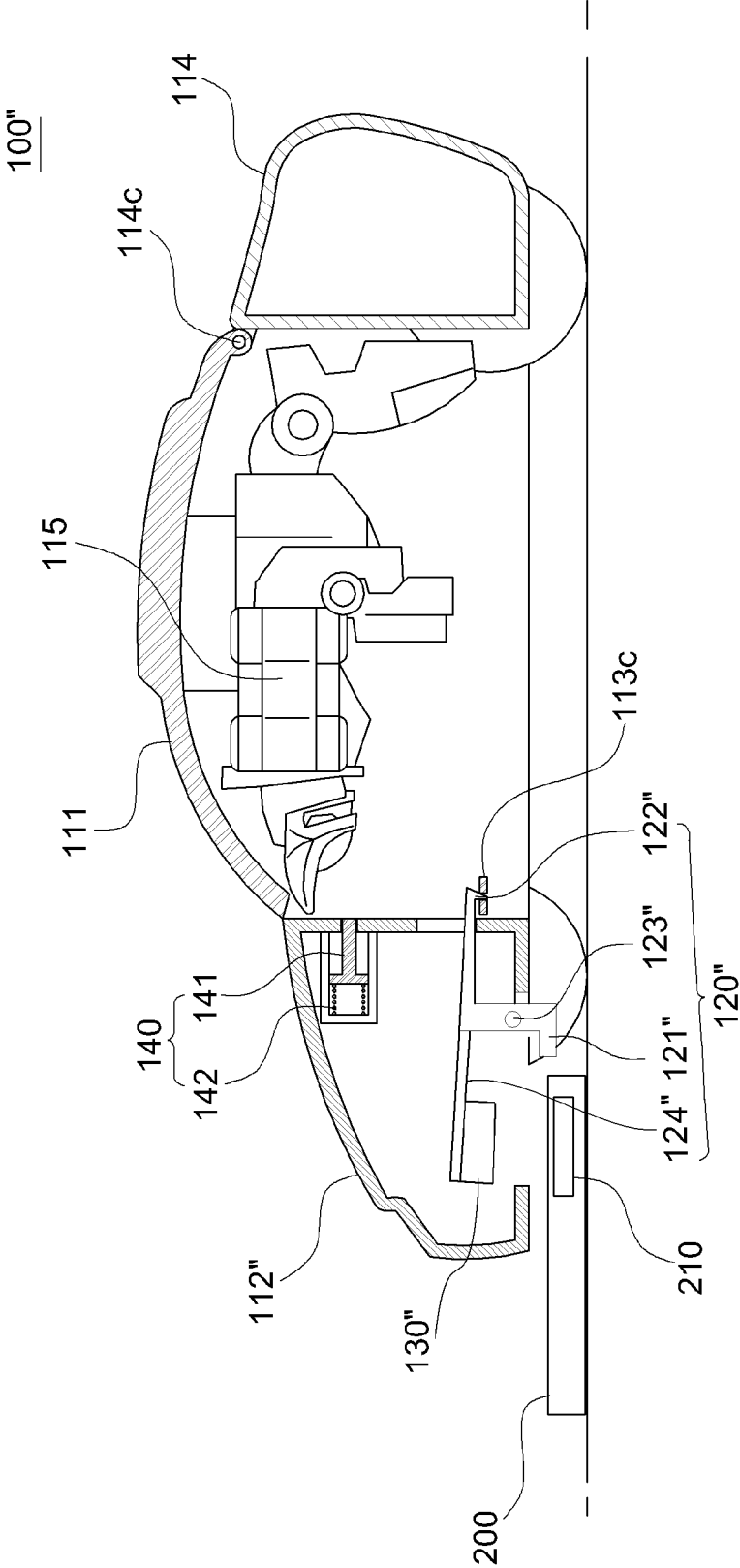


Fig. 8

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2016/005296

A. CLASSIFICATION OF SUBJECT MATTER

A63H 17/02(2006.01)i, A63H 3/04(2006.01)i

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A63H 17/02; A63H 3/04; A63H 17/00; A63H 17/26

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

Korean Utility models and applications for Utility models: IPC as above

Japanese Utility models and applications for Utility models: IPC as above

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

eKOMPASS (KIPO internal) & Keywords: toy, transformation, body part, separation, locking part, item, separation, magnetic material, character part

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 10-1400977 B1 (CHOI, Shin Kyu) 29 May 2014 See abstract, paragraphs [0055]-[0061], claim 1 and figures 1-4, 7-10.	1-12
A	KR 10-1327305 B1 (CHOI, Shin Kyu) 11 November 2013 See abstract, paragraphs [0054]-[0065], claims 1, 3-4 and figures 4-8.	1-12
A	KR 10-1527316 B1 (CHOI, Jong - Ill) 09 June 2015 See abstract, paragraphs [0025]-[0062] and figures 1-4.	1-12
A	KR 10-1999-0065295 A (LEE, Yong Hui) 05 August 1999 See abstract, claims 1-9 and figures 1-3.	1-12
A	KR 10-1400980 B1 (CHOI, Shin Kyu) 29 May 2014 See abstract, paragraphs [0067]-[0079], claim 1 and figures 1-4.	1-12

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

* Special categories of cited documents:

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"&" document member of the same patent family

Date of the actual completion of the international search

18 AUGUST 2016 (18.08.2016)

Date of mailing of the international search report

19 AUGUST 2016 (19.08.2016)

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2016/005296

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REFERENCES CITED IN THE DESCRIPTION

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