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## Patent Public Search | Text View

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United States Patent Application Publication

20250256213

Kind Code

A1

Publication Date

August 14, 2025

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### MODULAR TOY

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#### Abstract

The invention relates to a modular toy including a toy figurine and a cart body. The cart body has a hub portion with an upper side, a lower side, and a side surface. Further, the toy figurine is releasably attachable to the upper side of the hub portion such that the toy figurine is non-rotationally attached to the cart body. Three or more sphere connectors extend radially from the side surface of the hub portion. Each sphere connector is configured for releasably attaching a spherical body such that when a spherical body is attached to the sphere connector, the spherical body is rotatable relative to the sphere connector. The sphere connectors are arranged such that the center of the spherical bodies attached to the sphere connectors are in the same plane parallel to the lower surface of the hub portion.

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**Appl. No.:** 18/857666

**Filed (or PCT Filed):** April 27, 2023

**PCT No.:** PCT/EP2023/061078

#### Foreign Application Priority Data

DK PA202270222

Apr. 27, 2022

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#### Publication Classification

**Int. Cl.: A63H7/04** (20060101); **A63F7/06** (20060101); **A63F9/16** (20060101); **A63H1/20** (20060101); **A63H17/00** (20060101)

**U.S. Cl.:**

**CPC A63H7/04** (20130101); **A63F7/0632** (20130101); **A63F7/064** (20130101); **A63F9/16** (20130101); **A63H1/20** (20130101); **A63H17/002** (20130101);

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## **Background/Summary**

CROSS-REFERENCE TO RELATED APPLICATIONS [0001] The present application is a U.S. National Stage Application of International Application No. PCT/EP2023/061078 filed on Apr. 27, 2023, published on Nov. 2, 2023 as WO 2023/209072 A1, and entitled MODULAR TOY, which claims the benefit and priority of Danish Patent Application No. PA202270222, filed on Aug. 27, 2022, each of which is incorporated herein by reference in its entirety for any purpose whatsoever.

### **FIELD OF THE DISCLOSURE**

[0002] The present disclosure relates to toys, and more particularly to modular toys.

### **BACKGROUND**

[0003] GB2134397 A discloses a toy car with two parallel wheels and a ball rotatably retained by an arch-shaped recess.

[0004] US 2007/0205554 A1 discloses a jousting element for use in a game. The jousting element has a body which is arranged around a cylindrically aligned vertical axis. The body is configured to rotate about the vertical axis and to be carried above a playing surface. A traveling component connected to the body enables the body of the jousting element to be carried above the playing surface along multiple directions of travel. Attached to the body is a first playing component. The first playing component enables the jousting element to engage a second jousting element.

[0005] WO 82/03335 discloses a rollable toy having a body with axles having rollable members at their ends. An axle has a stepped, resilient, headed male portion and a female portion with which it mates, each portion having an outer socket for receiving a boss on a spherical hollow wheel member. The wheel member may have loose contents for creating a sound during rolling. A face member may be mounted on the body.

[0006] Modular toys in the form of e.g. carts are known in the art. Toy carts may cost efficiently be formed in a polymer material, typically injection moulded plastics. Such toy carts are often light weight, which affects their rolling performance. Further, such toy carts, even modular toy carts, are often very limited in their function. There is thus a need in the art for a versatile modular toy, where the rolling performance of a cart body of the modular toy is improved, so that also the play options are increased.

### **SUMMARY**

[0007] It is therefore an object of the disclosure to increase the variety of play options.

[0008] This is achieved by a modular toy comprising [0009] a toy figurine; and [0010] a cart body; wherein the cart body comprises [0011] a hub portion having an upper side, a lower side, and a side surface, the toy figurine being releasably attachable to the upper side of the hub portion, such that the toy figurine is non-rotationally attached to the cart body; and [0012] three or more sphere connectors extending radially from the side surface of the hub portion, [0013] wherein each sphere connector is configured for releasably attaching a spherical body, such that when a spherical body is attached to the sphere connector, the spherical body is rotatable relative to the sphere connector, and [0014] wherein the sphere connectors are arranged such that the centre of the spherical bodies attached to the sphere connectors are in the same plane parallel to the lower side of the hub portion.

[0015] By “non-rotationally attached” is meant that when attached the toy figurine is prevented from rotation relative to the cart body.

[0016] The non-rotationally attachment of the toy figurine allows a user easily manipulate the cart, for example spinning it.

[0017] The spherical bodies are preferably releasably attached in the sphere connectors in a snap connection. The snap connection is preferably provided by the material of the sphere connectors being slightly flexible, and/or by a shape of an inner surface of the sphere connectors.

[0018] The connection between the sphere connector and a sphere body is configured such that the sphere body is freely rotatable relative to the sphere connector, and thereby to the cart body.

[0019] Due to the spherical bodies being freely rotatable in all directions relative to the sphere connectors, when sphere bodies are attached in each sphere connector of the cart body, the toy cart may roll in any direction on a surface on which it is placed. Thereby, the play options are increased, as the toy figurine may be transported in unlimited paths.

[0020] Preferably, the spherical bodies are all of equal size, i.e. they have the same radius. The radius of the spherical bodies and the dimensions of the cart are arranged such that, when a spherical body is attached in each of the sphere connectors, and the spherical bodies rest on a planar surface, e.g. a floor or a table, the lower side of the hub portion is lifted above that planar surface. Further, in that situation, all other portions of the cart are lifted above that surface.

[0021] The spherical bodies may be marbles, such as stone marbles or glass marbles. However, they may also be formed in other materials such as metal or in principle polymers. In preferred embodiments the spherical bodies are formed in a “heavy” material, such that the cart of the toy may—when pushed or rotated—obtain more momentum, which affects its rolling properties.

[0022] Each of the sphere connectors of the toy are, in preferred embodiments, configured for attaching spherical bodies having the same diameter.

[0023] The sphere connectors may be generally ring-shaped structures, where the inner surface of the ring shaped structure has a concavity configured to hold the spherical body. In further embodiments the sphere connectors may be generally ring-shaped structures having identical inner diameters, such that they are configured to attach spherical bodies having equal diameters.

[0024] In an embodiment, the toy may further comprise a spherical body for each sphere connector. Thus, if the cart has three sphere connectors, the toy comprises at least three spherical bodies, and if the cart has four sphere connectors, the toy comprises at least four spherical bodies.

[0025] In an embodiment, the toy figurine is releasably attachable to the upper surface of the hub portion by the upper surface being provided with coupling means of a first type, and by a lower surface of the toy figurine being provided with coupling means of a second type, where the coupling means of a first type and the coupling means of a second type are mutually corresponding.

[0026] In an embodiment thereof, the non-rotational attachment of the toy figurine to the hub portion is provided by two spaced apart coupling means of a first type on the upper side of the hub portion, and the lower surface of the toy figurine being provided with two equidistantly arranged coupling means of the second type.

[0027] In some embodiments thereof, the coupling means of a first type may be provided by a particular cross sectional shape of the legs or feet of the toy figurine, and where the coupling means of a second type may be provided by corresponding openings provided in the upper surface of the hub portion of the cart, the openings having a cross sectional shape cooperating with the shape of the coupling means of the second type. Thereby, the toy figurine may be loosely attached to the cart in the sense that the cooperating shapes prevents movement of the toy figurine relative to the cart in any direction in a plane parallel to the above mentioned first plane, thereby allowing manipulation (spinning, liner movement, etc.) of the cart though the toy figurine, and allowing movement in a direction perpendicular to the first plane. Thereby, the toy figurine can very easily be attached to and removed from the cart, and further the toy figurine may be ejected from the cart, for example on impact with another object.

[0028] Alternatively, and in a preferred embodiment, the coupling means are knobs, and the coupling means of the second type are knob-receiving openings. Such coupling means are known in the art, and allows attachment via a press fit.

[0029] The toy in these embodiments may for example be used in games, where a number of users, each having a copy of the toys, may compete in getting as close as possible to an edge of a surface, such as a table, without falling over the edge. Users may also compete in a petanque (boule) or curling-like game where the object is to get as close as possible to a given point or line on a planar surface. The ability of the toy to spin and slide may increase the complexity of the game. A toy may also be used in an “air hockey” type game, where two users opposing each other pushes the toy from side to side between them.

[0030] In either of the above embodiments, the toy may further comprise a spinning element, the spinning element being releasably attachable to the hub portion at the lower side thereof, the spinning element having an upper surface and a lower convex surface and a first height, wherein the first height is such that when the spinning element is attached to the hub portion, and the toy is rested on a planar surface, a maximum of two of the spherical bodies rest on the planar surface.

[0031] This means that if the toy is spun, for example by manipulating the toy figurine, all of the spherical bodies will elevate from the surface on which the toy is spun, and will function as a classical spinning toy. The weight of the spherical bodies will add momentum and prolong the spinning of the toy. Thereby, when the spinner element is attached, additional play options are added. For example, two or more users each having a toy according to this embodiment may let their toy figurines battle against each other in spinning battels.

[0032] In any of the above embodiments either the toy figurine, or the cart, or both, may be provided with coupling means of a third kind, configured to attach another object such as a toy spear, a toy sword or a toy flag.

[0033] The first height is defined between the upper surface and the lower convex surface of the spinning element.

[0034] In an embodiment, the spinning element is releasably attachable to the lower side of the hub portion by the upper surface of the spinning element being provided with coupling means of a first type, and the lower side of the hub portion being provided with coupling means of a second type, and where the coupling means of a first type and the coupling means of a second type are mutually corresponding.

[0035] In a further embodiment, the coupling means of the first type are knobs, and the coupling means of the second type are knob-receiving openings.

[0036] In further embodiments, the embodiments relating to releasably connecting the toy figurine to the hub portion of the cart, and the embodiments for connecting the spinning element to the hub portion of the cart may be combined, such that the same coupling means of the first type and the same coupling means of the second types are used for both sets of embodiments.

[0037] The combination of the cart body with sphere bodies attached in the sphere connectors, and a spinner element attached to the cart body, allows the use of the cart as a spinner/spinning top, where the sphere bodies provide weight to the spinner by providing a momentum when spun. Attaching a toy figurine to the cart body allows an easy way for a user to spin the assembly and thereby an improved spinning top/spinner is provided. Further, the toy figurine being attached to the cart and spinning element allows the modular toy to appear like a spinning person, for example a fighting ninja. This is cool.

[0038] In further embodiments, the spinning element comprises a spacer element and spinner tile, where the spacer element is connectable at one end to the lower side of the hub portion and at an opposite end to the spinner tile, and where the convex surface of the spinning element is the lower surface of the spinner tile.

[0039] In a further embodiment, thereof the spacer element is cylindrical in shape and has tubular element rotationally attached on an outside surface of the spacer element. Thereby, the tubular

element may be rotationally connected relative to the cart.

[0040] This tubular element may be provided with one or more coupling means of a third kind, configured to attach another object such as a toy spear, a toy sword or a toy flag. Thereby, flags, swords or spears may for example be brought to rotate in a different direction than the cart, or in the same direction, but with a different rotational speed.

[0041] In either of the above embodiments, the sphere connectors may be ring shaped, and wherein an inner surface of the ring-shaped sphere connector is provided with an annular cavity corresponding to an arc of the spherical body.

[0042] In either of the above mentioned embodiments the toy figurine, or any subcomponent thereof is preferably formed in a polymer material, such as a plastic. The toy figurine, or any subcomponent, may be formed in an injection moulding process.

[0043] In either of the above mentioned embodiments the hub portion and the sphere connectors may be formed as one integrated unit, and preferably in a polymer material, such as a plastic. Thereby the cart body of the cart may be formed in an injection moulding process.

[0044] It should be emphasized that the term “comprises/comprising/comprised of” when used in this specification is taken to specify the presence of stated features, integers, steps or components but does not preclude the presence or addition of one or more other features, integers, steps, components or groups thereof.

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## Description

### BRIEF DESCRIPTION OF THE DRAWINGS

[0045] It should be appreciated that the subject technology can be implemented and utilized in numerous ways, including without limitation as a process, an apparatus, a system, a device, a method for applications now known and later developed. So that those having ordinary skill in the art to which the disclosed technology appertains will more readily understand how to make and use the same, reference may be had to the following drawings. It should be emphasized that the embodiments shown are used for example purposes only and should not be used to limit the scope of the disclosure.

[0046] FIG. 1, in a perspective view, shows a modular toy according to one embodiment of the disclosure, the modular toy comprising a toy figurine and a cart with three spherical bodies;

[0047] FIG. 2A, in a perspective view, shows a modular toy according to another embodiment of the disclosure, the modular toy comprising a toy figurine and a cart with three spherical bodies;

[0048] FIG. 2B, in a perspective view, shows a cart body of the cart shown in FIG. 2A, and with three spherical bodies for a toy, the cart comprising coupling means of a first type;

[0049] FIG. 3, in perspective view shows a toy figurine for a toy according to the disclosure, the toy figurine having coupling means of a second type complementary with coupling means of a first type;

[0050] FIG. 4A, in a perspective view from below, shows a prior art modular construction element, the modular construction element having coupling means of a first type—in the form of knobs—formed on one surface and coupling means of a second type—knob receiving openings—on an opposite surface;

[0051] FIG. 4B, in a see-through perspective view from above, shows the prior art modular construction element of FIG. 4A;

[0052] FIG. 5, in a cross sectional side view, shows a cart for a toy according to yet an embodiment of the disclosure;

[0053] FIG. 6A, in a cross sectional side view, shows the cart of FIG. 5 with a spinning element attached thereto

[0054] FIG. 6B, in a cross sectional side view, shows the cart of FIG. 5 with a spinning element

detached therefrom;

[0055] FIG. 7A, in a cross sectional side view, shows the cart of FIG. 5 with a spinning element attached thereto, where the spinning element is constructed from two modular construction elements, a spacer element and a spinner tile; and

[0056] FIG. 7B shows the cart of FIG. 7B, with the spacer element and the spinner tile of the spinning element detached from the cart and from each other.

#### DETAILED DESCRIPTION

[0057] The subject technology overcomes many of the prior art problems associated with modular toys. The advantages, and other features of the technology disclosed herein, will become more readily apparent to those having ordinary skill in the art from the following detailed description of certain preferred embodiments taken in conjunction with the drawings which set forth representative embodiments of the present technology and wherein like reference numerals identify similar structural elements. Directional indications such as front, back, upward, downward, right, left and the like are used with respect to the figures and not meant in a limiting manner.

[0058] FIG. 1A shows one embodiment of modular toy **1** according to the disclosure, and FIG. 1B show another. The two embodiments are almost identical, apart from a few detail, which will be mentioned below. In either embodiment, the modular toy **1** comprises a toy figurine **100** and a cart **10**. The toy figurine **100** is releasably attachable to the cart **10** as describe further below. Thus, the toy figurine **100** may be used with ether cart **10** and vice versa.

[0059] The cart **10** comprises a cart body **11** and three spherical bodies **300** attached thereto. The spherical bodies **300** are releasably attachable to the cart **10**, so that they may be replaced or interchanged. The spherical bodies **300** may for example be provided with patterns or have different colours. Having a larger number of spherical bodies **300** than being attachable to the cart at the same time will allow a user to customize the cart.

[0060] The cart body **11** comprises a hub portion **20** and three sphere connectors **30** extending radially outwards from the hub portion **20**, the sphere connectors **30** being arranged in a plane, and in the same plane as the hub. Thus, the cart body **11** is a generally flat structure.

[0061] Referring also to FIG. 2 and e.g. FIG. 6A, the hub portion **20** comprises, body **21** having an upper side **22**, a lower side **23**, opposite to the upper side **22**, and a side surface **24**.

[0062] The toy figurine **100** is releasably attachable to the upper side **22** of the hub portion **20**.

[0063] The three sphere connectors **30** extend radially from the side surface **24** of the hub portion **20**.

[0064] The sphere connectors **30**, and the hub portion **20** are preferably formed integral as a unit. However, in some not shown embodiments, the sphere connectors may be releasably attached to the hub portion **20**. This may be made possible by the sphere connectors **30** and the hub portion **20** being provided with suitable complimentary coupling means.

[0065] As shown in FIG. 1A, plate sections **12** may extend radially outwards from the hub portion **20** between the sphere connectors **30**. Such plate sections **12** are optional. On an upper surface of the plate sections **12** in FIG. 1A, coupling means of a first type **91**—in the form of knobs (or studs)—are provided. These may be used to attach further modular toy construction elements to the cart **10**. Coupling means of a first type **91** (knobs/studs) are discussed in more detail below. In FIG. 1A, two knob type coupling means of a first type **91** are provided on each plate section **12**.

[0066] The embodiment shown in FIGS. 1B and FIG. 2, also comprises plate sections **12**. Also these plate sections **12** extends radially outwards from the hub portion **20** between the sphere connectors **30**, but in this embodiment, the plate sections **12** are not connected to outer surfaces of the sphere connectors, as is the case in the FIG. 1A embodiment.

[0067] Also in the FIG. 1B embodiment, coupling means of a first type **91**—in the form of knobs (or studs)—are provided on an upper surface of the plate sections **12**. Again these may be used to attach further modular toy construction elements to the cart **10**. In FIG. 1B, one knob type coupling means of a first type **91** are provided on each plate section **12**.

[0068] It will be realized, that in other embodiments there may be more than three sphere connectors **30**. For example, FIGS. **6A-B** are sections through an embodiment (FIG. **5**) having four sphere connectors **30** arranged equidistantly along the periphery of the hub portion **20** (90° apart).

[0069] It is noted that the three sphere connectors **30** in the FIG. **1A** and FIG. **1B** embodiments are also arranged equidistantly along the periphery of the hub portion **20**, (120° apart).

[0070] In either case, each sphere connector **30** is configured for releasably attaching a spherical body **300**.

[0071] Further, the releasable attachment of each spherical body to a sphere connector **30** is such that when a spherical body **300** is attached to the sphere connector **30**, the spherical body **300** is rotatable relative to the sphere connector **30** in all directions.

[0072] As shown in FIG. **5**, the sphere connectors **30** are arranged such that the centre of the spherical bodies **300**, when attached to the sphere connectors **30**, are in same first plane **P1**, which is arranged in parallel to a plane defined by the lower side **23** of the hub portion **20**.

[0073] The upper surface **22** of the hub portion **20** is also parallel to the lower side **23** of the hub portion **20**, and therefore to the first plane **P1**.

[0074] The spherical bodies **300** are preferably all of equal size, i.e. they have the same radius, **R**. The radius of the spherical bodies **300** and the dimensions of the cart **10** are arranged such that, when a spherical body **300** is attached in each of the sphere connectors **30**, and the spherical bodies **300** rest on a planar surface, e.g. a floor or a table, the lower side **23** of the hub portion is lifted above that planar surface. Further, in that situation, all other portions of the cart **10** are lifted above that surface, as shown in FIG. **5**. Thereby, due to the free rotation of the spherical bodies in the sphere connectors **30** the cart may move unimpeded in every direction on a surface on which it is placed.

[0075] Now referring to FIG. **3**, the toy figurine **100** is a figure representing a humanoid. The toy figurine comprises a head **110** extending from an upper body **120**, to which arms **130** are attached on each side. In the shown example (FIGS. **1** and **3**), the head is rotatable relative to the upper body **120**, and releasable attached thereto. Further, each arm is rotatable relative to the upper body **120**, and releasable attached thereto. A hand **140** may be provided in extension of each arm **130**. Each hand **140** is rotatable relative to the arm **130**, and releasable attached thereto.

[0076] Each hand **140** may be shaped in a U shape, such that the hand **140** provides a coupling means of a third kind **93** for coupling a rod shaped element thereto in a snap fit connection. Thereby, the hand **140** may be configured to attach another object (not shown), such as a toy spear, a toy sword or a toy flag.

[0077] The toy figurine **100** further comprises a lower body portion **150**, which is releasably attached to the upper body **120**. Two legs **160** are attached to the lower body independently rotatable to the lower body **150**. A foot **170** is formed in extension of each leg **160**.

[0078] The toy figurine **100** further has a lower surface **180**, in this embodiment provide at the bottom of the feet **170**.

[0079] The toy figurine **100** is releasably attachable to the upper surface **22** of the hub portion **20** by the upper surface **22** being provided with coupling means of a first type **91** which are configured for cooperating with coupling means of a second type **92** provided on the lower surface **180** of the toy figurine **100**.

[0080] In some embodiments and as exemplified in FIG. **1A**, the coupling means of a first type may be provided by a particular cross sectional shape of the legs **160** or feet **170** of the toy figurine **100**, and where the coupling means of a second type may be provided by corresponding openings provided in the upper surface of the hub portion **20** of the cart **10**, the openings having a cross sectional shape cooperating with the shape of the coupling means of the second type. Thereby, the toy figurine **100** may be loosely attached to the cart **10** in the sense that the cooperating shapes prevents movement of the toy figurine **100** relative to the cart **10** in any direction in a plane parallel to the above mentioned first plane, **P1**, thereby allowing manipulation (spinning, linear movement,

etc.) of the cart **10** though the toy figurine **100**, and allowing movement in a direction perpendicular to the first plane, **P1**. Thereby, the toy figurine **100** can very easily be attached to and removed from the cart **10**, and further the toy figurine **100** may be ejected from the cart, for example on impact with another object.

[0081] However, as shown in FIG. **1B** and FIG. **2**, preferably the coupling means **91** for releasably attaching the toy figurine **100** to the upper surface **22** of the hub portion **20** are knobs, and as shown in FIG. **3** the coupling means of the second type **92** are knob-receiving openings.

[0082] Further as shown in FIG. **2** two knobs are provided as coupling means of the first type **91**. When the toy figurine **100** is attached via the knob receiving openings, i.e. coupling means of the second type **92**, formed in the lower surface **180** of the toy figurine, which are distanced from each other by the same distance as the two knobs on the upper surface **22** of the hub portion **20**, the toy figurine will be non-rotational attached to the hub portion **20**. It will be realized that the same result is achieved by the coupling in FIG. **1A**.

[0083] The coupling between various objects using knobs and knob receiving openings is well known in the art from modular construction elements **200** such as shown in FIG. **4A-B**.

[0084] Now, referring to FIGS. **6A-B**, the modular toy **1** further comprises a spinning element **40**. The spinning element **40** is releasably attachable to the hub portion **20** at the lower side **23** thereof.

[0085] The spinning element **40** comprises a body portion **41** having an upper surface **42**, a lower convex surface **43**, and a first height, **H1**.

[0086] The first height, **H1** is defined between the upper surface **42** and the lowermost point of the lower convex surface **43** of the spinning element **40**. (when the spinning element **40** is oriented as shown in the drawings with the first coupling means **91** extending upwards).

[0087] The first height, **H1**, is such that when the spinning element **40** is attached to the hub portion **20**, and the toy **1** is rested on a planar surface, a maximum of two of the spherical bodies **300** rest on the planar surface.

[0088] This means that if the toy **1** is spun, for example by manipulating the toy figurine **100**, all of the spherical bodies **300** will elevate from the surface on which the toy **1** is spun, and will function as a classical spinning toy.

[0089] The releasable attachment of the spinning element **40** to the lower side **23** of the hub portion **20** is provided by the upper surface **42** of the spinning element **40** being provided with coupling means of a first type **91**, and the lower side **23** of the hub portion **20** being provided with coupling means of a second type **92**, not shown. As indicated in FIGS. **6A-B**, the coupling means of the first type **91** are preferably knobs, and the coupling means of the second type **92** are cooperating knob-receiving openings. In other embodiments other types of couplings may be utilized.

[0090] In embodiments shown in FIGS. **7A-B**, the spinning element **40** is formed by a combination of sub-elements. In one embodiment, the spinning element **40** comprises a spacer element **50** and spinner tile **60**, attachable thereto. The spacer element **50** comprises a body **51** having height **H2** from an upper side **52** to a lower side **53**. The spacer element **50** is connectable at one end, the upper side **52** to the lower side **23** of the hub portion **20**. The upper side **52** of the spacer element **50** may be provided with first type coupling means **91** for example in the form of knobs, and the lower side **23** of the hub portion **20**, may as already described above be provided with knob receiving openings (second type coupling means **92**). The opposite end, the lower side **53** of the spacer element **50** is releasably attachable to the spinner tile **60**. The spinner tile **60** comprises a body **61**, having a height, **H3**, between an upper side **62** and a lower side **63**. The upper side **62** of the spinner tile **60** may be provided with first type coupling means **91** for example in the form of knobs as shown in FIGS. **6A-B**, such that when the lower side **53** of the spacer element **50** is provided with second type coupling means **92** in the form of knob receiving openings, a releasable attachment between the spacer element **50** and the spinner tile **60** is provided. The lower side **53** of the spinner tile is convex. In such embodiments the convex surface **63** spinner tile **60** forms the convex surface **43** of the spinning element **40**, when the spacer element **50** and the spinner tile **60**



are connected to form a spinning element **40**. It will be appreciated that the third height, H3 is defined between the upper surface **62** and the lowermost point of the lower convex surface **63** of the spinning tile **60**. (when the spinning tile **60** is oriented as shown in the drawings with the first coupling means **91** extending upwards).

[0091] In further, not shown embodiments, the spacer element **50** is cylindrical in shape and has tubular element rotationally attached on an outside surface thereof.

[0092] As shown in FIGS. **1A**, **1B**, **2** and **6A**, the sphere connectors **30** may be ring shaped, where an inner surface **31** of the ring-shaped sphere connector is provided with an annular cavity—or concave surface—which corresponds in shape to an arc of the spherical body **300** to be attached in the sphere connector **30**.

[0093] It will be appreciated by those of ordinary skill in the pertinent art that the functions of several elements may, in alternative embodiments, be carried out by fewer elements, or a single element. Similarly, in some embodiments, any functional element may perform fewer, or different, operations than those described with respect to the illustrated embodiment. Also, functional elements shown as distinct or integral for purposes of illustration may be incorporated within other functional elements or separated into multiple components in a particular implementation. Further, although the subject technology has been described with respect to modular toys, it is envisioned that the subject technology would be equally applicable to other devices.

[0094] While the subject technology has been described with respect to preferred embodiments, those skilled in the art will readily appreciate that various changes and/or modifications can be made to the subject technology and claims without departing from the spirit or scope of the disclosure. For example, each claim may depend from any or all claims in a multiple dependent manner even though such has not been originally claimed and various components and features may be added into other claims or removed from the original claims. Reference numerals in the claims are only for illustration and not limiting with respect to other embodiments, structures and versions.

#### LIST OF PARTS

[0095] **1** toy [0096] **10** cart [0097] **11** cart body [0098] **12** plate sections extending from cart body and between adjacent sphere connectors [0099] **20** hub portion of cart [0100] **21** body of hub portion [0101] **22** upper side of hub portion/body of hub portion [0102] **23** lower side of hub portion/body of hub portion [0103] **24** side surface of hub portion/body of hub portion [0104] **30** sphere connector [0105] **40** spinning element [0106] **41** body/body portion of spinning element [0107] **42** upper surface of spinning element [0108] **43** lower, concave surface of spinning element [0109] **50** spacer element [0110] **51** body of spacer element [0111] **52** upper side of body of space element [0112] **53** lower side of body of spacer element [0113] **60** spinner tile [0114] **61** body of spinner tile [0115] **62** upper side of spinner tile [0116] **63** lower, concave surface of spinner tile [0117] **91** coupling means of first type [0118] **92** coupling means of second type [0119] **93** coupling means of third type [0120] **100** toy figurine [0121] **110** head of toy figurine [0122] **120** upper body of toy figurine [0123] **130** arms of toy figurine [0124] **140** hands of toy figurine [0125] **150** lower body of toy figurine [0126] **160** leg of toy figurine [0127] **170** foot of toy figurine [0128] **180** lower surface of toy figurine [0129] **200** modular construction element (prior art) [0130] **300** spherical body [0131] H1 first height, height of spinning element [0132] H2 second height, height of distance element [0133] H3 third height, height of spinner tile [0134] R Radius of spherical body

#### Claims

**1.** A modular toy comprising a toy figurine; and a cart body; wherein the cart body comprises a hub portion having an upper side, a lower side, and a side surface, the toy figurine being releasably attachable to the upper side of the hub portion, such that the toy figurine is non-rotationally

attached to the cart body ; and three or more sphere connectors extending radially from the side surface of the hub portion, wherein each sphere connector is configured for releasably attaching a spherical body, such that when a spherical body is attached to the sphere connector, the spherical body is rotatable relative to the sphere connector, wherein the sphere connectors are arranged such that a center of the spherical bodies attached to the sphere connectors are in a same plane parallel to the lower side of the hub portion, and wherein the sphere connectors are configured such that the spherical bodies are freely rotatable relative to the sphere connector in all directions.

**2.** The modular toy according to claim 1, wherein the toy figurine is releasably attachable to the upper surface of the hub portion by the upper surface being provided with coupling means of a first type, and a lower surface of the toy figurine being provided with coupling means of a second type, and where the coupling means of a first type and the coupling means of a second type are mutually corresponding.

**3.** The modular toy according to claim 2, wherein the non-rotational attachment of the toy figurine to the hub portion is provided by two spaced apart coupling means of the first type on the upper side of the hub portion, and the lower surface of the toy figurine being provided with two equidistantly arranged coupling means of the second type.

**4.** The modular toy according to claim 2, wherein the coupling means of the first type are knobs, and where the coupling means of the second type are knob-receiving openings.

**5.** The modular toy according to claim 1, further comprising a spinning element releasably attachable to the hub portion at the lower side thereof, the spinning element having an upper surface and a lower convex surface and a first height, wherein the first height is such that when the spinning element is attached to the hub portion, and the toy is rested on a planar surface, a maximum of two of the spherical bodies rest on the planar surface.

**6.** The modular toy according to claim 5, wherein the spinning element is releasably attachable to the lower side of the hub portion by the upper surface of the spinning element being provided with coupling means of the first type, and the lower side of the hub portion being provided with coupling means of the second type, and where the coupling means of the first type and the coupling means of the second type are mutually corresponding.

**7.** The modular toy according to claim 6, wherein the coupling means of the first type are knobs, and where the coupling means of the second type are knob-receiving openings.

**8.** The modular toy according to claim 5, wherein the spinning element comprises a spacer element and spinner tile, where the spacer element is connectable at one end to the lower side of the hub portion and at an opposite end to the spinner tile, and where the convex surface of the spinning element is the lower surface of the spinner tile.

**9.** The modular toy according to claim 6, wherein the spacer element is cylindrical in shape and has tubular element rotationally attached on an outside surface thereof.

**10.** The modular toy according to claim 1, wherein the sphere connectors are ring shaped, and wherein an inner surface of the ring-shaped sphere connector is provided with an annular cavity corresponding to an arc of the spherical body.

**11.** The modular toy according to claim 1, wherein the hub portion and the sphere connectors are formed as an integral unit.

**12.** The modular toy according to claim 1, wherein the sphere connectors are detachably attached to the hub portion.

**13.** A modular toy comprising: a toy figurine; and a cart body, the cart body having: a hub portion with an proximal side, a distal side, and a side surface, the toy figurine being attachable to the proximal side of the hub portion such that the toy figurine cannot rotate when attached; and three sphere connectors extending radially from the side surface of the hub portion, each sphere connector configured for attaching a spherical body such that the spherical bodies are freely rotatable relative to the sphere connector in all directions, the sphere connectors arranged such that a center of the spherical bodies attached to the sphere connectors are in a same plane parallel to the

distal side of the hub portion.

**14.** The modular toy according to claim 13, further comprising a spinning element releasably attachable to the hub portion on the distal side thereof, the spinning element having a proximal surface and a distal convex surface and a first height, wherein the first height is such that when the spinning element is attached to the hub portion, and the toy is rested on a planar surface, a maximum of two of the spherical bodies rest on the planar surface.

**15.** The modular toy according to claim 14, wherein the spinning element comprises a spacer element and spinner tile, wherein the spacer element is connectable at one end to the distal side of the hub portion and at an opposite end to the spinner tile, and wherein the convex surface of the spinning element is the distal surface of the spinner tile.

**16.** The modular toy according to claim 15, wherein the spacer element is cylindrical in shape and has tubular element rotationally attached on an outside surface thereof.

**17.** The modular toy according to claim 13, wherein the sphere connectors are ring shaped, and wherein an inner surface of the ring-shaped sphere connector is provided with an annular cavity corresponding to an arc of the spherical body.

**18.** The modular toy according to claim 13, wherein the hub portion and the sphere connectors are formed as an integral unit.

**19.** The modular toy according to claim 13, wherein the sphere connectors are detachably attached to the hub portion.

**20.** A modular toy comprising: a cart having: a cart body configured for receiving a toy figurine, the cart body extending along a cart body plane; and three sphere connectors extending radially from the cart body, each sphere connector configured for releasably attaching a rotatable spherical body, the spherical body arranged in the sphere connectors such that a center of the spherical bodies are aligned in the cart body plane.

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