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(54) Magnetized doll with replaceable apendages

(57) A toy is provided comprising a number of portions including a head, body and leg portions. The portions are detachably attached to each other via complementary engagement means such that, when engaged, the portions form the toy. The engagement means of each portion include magnetic material and the magnetic attraction allows, at least in part, engagement of the portions to each other.

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Description

[0001] The invention which is the subject of this application relates to a toy which can be positioned with respect to a playbase and, in addition to the combination of these features, the invention relates to improvements of the toy and playbase separately.

[0002] The provision of toys which can be located with and slidably movable across a miniaturised playbase are known, and the applicant has granted patents relating to specific features of the same where the toy, typically depicting a human character, is capable of being moved across the playbase surface by manipulation of associated control means by a user.

[0003] While the known toys have been commercially successful, there is a need to increase or maintain the interest of a child in the playbase and/or the toy over a longer period of time. One known way is to provide "clothes" which can be interchangeable with respect to the toy to allow the child to change the appearance of the toy. It is also known to be able to separate parts of the toy and replace them with other parts but said parts are typically either fixed when in position or, at best, allow rotational movement about one axis only and therefore there is no "realism" to the character depicted by the toy. Furthermore, the articles of this type tend to be only used for "standing" in one position or alternatively, if they are provided to be attached to a playbase via protrusions, the toy is typically formed from the connection of a series of building blocks and again has very little "realism".

[0004] The aim of the present invention is to provide a toy which has added realism in comparison to known toys of this type and which allows a user/child to adapt the toy and/or the playbase selectively to alter the appearance of the same and thereby increase the attractiveness and entertainment obtained from the toy or toy/playbase combination.

[0005] According to a first aspect of the present invention there is provided a toy, said toy including two or more portions, adjacent portions being detachably attached to each other via complementary engagement means and, when engaged, said portions forming the toy and characterised in that the complementary engagement means include a magnet in one of the portions and a magnetically attractive material in the other portion and the magnetic attraction between the same allows, at least in part, engagement of the adjacent portions to each other.

[0006] The provision of the magnetic material in or adjacent the engagement means allows secure engagement between the portions whilst allowing increased articulation of the portions. Once the portions have been moved to a required position by a user, the magnetic attraction between the portions maintains the portions relative to each other in said position until a user further manipulates the portions.

[0007] Preferably the complementary engagement means further include a protrusion member on one of said portions which engages with a recess on an adjacent portion.

[0008] The protrusion member of one portion can be fully enclosed in the recess of an adjacent portion or can be partially enclosed, thereby typically providing greater articulation. The provision of the magnetic material allows either embodiment to function.

[0009] In one embodiment the complementary engagement means are in the form of a ball and socket joint. In an alternative embodiment the complementary engagement means includes a concave portion and a hemispherical or rounded portion.

[0010] The magnetic material, typically in the form of one or more magnets, can be provided in, on or adjacent the engagement means on the first portion and a magnetically attractive material such as a suitable metal provided on the engagement means of the second portion. The provision of a metal and a magnet means that the magnetic attraction is sufficiently strong to retain the portions in the desired engaged position but not so strong, as can be the case if magnets were used in both portions as to always move the portions to a straight, in line configuration. However for certain uses the magnetically attractive material can be replaced by a magnet if required.

[0011] Preferably one or more of the toy portions are formed from substantially flexible material, such as a rubberised material, one suitable material known by the registered trademark KRATON. This allows the portions of the toy to be manipulated to required positions, thereby increasing the realism of the toy to a user.

[0012] Preferably the toy is in the form of a scale model of a human or animal and the portions represent any or any combination of body parts, such as a head, torso, arms, legs, hands and feet and if a human character, one or more garments to be worn by the character, such as a trousers, skirt, jumper and/or the like, hair, accessories, such as a handbag, hat, shoes and/or the like or one or more articles attached to the character, such as a dog and/or the like. Typically the toy is formed from three portions, a head portion, torso portion and legs and feet portion.

[0013] In one embodiment a number of sets of portions can be provided to be interchangeable to allow adjustment of the appearance of the toy. Corresponding portions within each set can differ in appearance and different portions from each set can be detachably attached together to form the toy. The portions within each set typically form a complete toy. For example, each set can comprise a head portion, a torso portion, arm portions and leg portions which differ in appearance. The head portion from one set can be interchanged for engagement with a body portion of a different set. Typically the corresponding portion in each set of portions has a generally similar shape but is of a different appearance in terms of, for example, colour, shape, texture and/or pose.

[0014] In a preferred embodiment the portions of each set are provided with movement means to allow movement of a portion of one set relative to a portion of another set. Once portions are moved within a pre-determined distance of each other, the magnetic attraction between the portions allows engagement of said complementary engagement means. Mechanical means can be provided to allow the portions to be moved within said pre-determined distance.

[0015] Preferably movement of the movement means is mechanically or electrically driven. For example, a motor can be provided to drive the movement of one portion relative to another portion. Alternatively, a user can cause one portion to pivot, rotate or slide relative to another portion.

[0016] Preferably the movement means are in the form of a carousel arrangement and the toy portions are provided thereon. The carousel is rotatably movable to allow a portion of one set to be moved relative to a portion of another set. The toy portions are typically detachably attached to the carousel arrangement to allow the toy to be assembled. Alternatively, the toy can be assembled on the carousel if required.

[0017] The carousel preferably includes two or more carousel members, each carousel member rotatable relative to an adjacent carousel member.

[0018] In an alternative embodiment the movement means are in the form of two or more movable plate members, each plate member movable relative to an adjacent plate member. The plate members can rotate or undergo linear movement, such as sliding movement relative to an adjacent plate member.

[0019] In either embodiment corresponding portions of the toy are provided on a particular plate or carousel member. For example, the head portions of each set can be provided on an upper carousel portion, the torso portions of each set can be provided on a middle carousel portion and the leg portions of each set can be provided on a lower carousel portion.

[0020] Preferably the engagement means allow selective positioning of the two or more portions with respect to at least two axes. In one embodiment the movement in at least two axes includes rotation about vertical and horizontal axes. Preferably adjustment is possible in a plurality of axes intermediate the two given axes. Preferably the movement can be to tilt the portions with respect to each other about the central axis of the engagement means The movement allows the attitude of the respective portions to be adjusted and hence the realism of the toy to be increased.

[0021] Preferably the toy is provided for selective positioning on a playbase or walls of a play area by magnetic attraction between the toy and the playbase or walls. In addition further objects such as inanimate articles, can be provided for selective location on said playbase.

[0022] According to a second aspect of the present invention there is provided a toy kit, said toy kit including a number of sets of toy portions, said toy portions being detachably attached to each other via complementary engagement means and characterised in that the engagement means of each portion includes magnet or magnetically attractive material and the magnetic attraction allows, at least in part, engagement of adjacent toy portions together.

[0023] Preferably the toy kit also includes a playbase or walls of a play area onto which a toy can be selectively attached.

[0024] The toy kit of the present invention can include any or any combination of features described hereinbefore.

[0025] In a further aspect of the present invention there is provided a toy, said toy including two or more portions, said portions being detachably attached to each other via complementary engagement means and, when engaged, said portions forming the toy, characterised in that the engagement means, when engaged, allow selective positioning of the said two or more portions with respect to at least two axes.

[0026] Preferably the engagement means include male and female engagement members and a sufficient friction fit is provided between said members to ensure that, when the portions are moved to a selected position, the male and female members are retained in position until manually manipulated.

[0027] In one embodiment the movement in at least two axes includes rotation about vertical and horizontal axes. Preferably adjustment is possible in a plurality of axes intermediate the two given axes.

[0028] Preferably the portions that are adjustable are any of the head, torso, arms, legs and/or the like.

[0029] In one embodiment, the engagement means may be substituted with a different form of engagement means to allow the article to perform different functions, such as a standing function or sitting function.

[0030] In a yet further aspect of the invention there is provided a playbase for the location and retention of at least one toy thereon, said playbase having a surface with a plurality of spaced protrusions formed thereon, said protrusions spaced in a uniform array and characterised in that the array is formed from a repeated hexagonal pattern of protrusions, said protrusions forming the six apexes of the hexagon.

[0031] Specific embodiments of the invention are now described with reference to the accompanying drawings.

Figure 1 illustrates the portions which, when combined, can form a toy in accordance with the present invention;

Figure 2a illustrates a series of toys formed in accordance with the present invention in various embodiments and Figure 2b illustrates the portions of one of the toys of Figure 2a when separated;

Figure 3a illustrates different toys with accessories and Figure 3b illustrates the toy portions and accessories when separated;

Figure 4 illustrates a carousel arrangement in accordance with one embodiment of the present invention;

Figure 5 illustrates a slidable plate arrangement in accordance with an alternative embodiment of the present invention;

Figures 6a and 6b illustrate alternative engagement means according to the present invention; and

Figures 7a-7c illustrate further examples of toys in both assembled and separated conditions in accordance with the present invention.

[0032] Referring firstly to Figure 1, there is illustrated a series of portions, 2, 4, 6 which, when joined together, form a toy 8 in accordance with the invention (assembled toys 8a, 8b, 8c, 8d are shown in figure 2a). In this example, portion 2 depicts a head of the toy, portion 4 depicts a torso and arms of the toy, and portion 6 depicts legs of the toy.

[0033] The portions of the toy are assembled by engaging adjacent portions together via matching engagement means which, in this example are in the form of a ball and socket joint arrangement. Thus, head portion 2 is provided to engage with the top of torso portion 4 via the male and female parts of the ball and socket joint arrangement 10, and the bottom of body portion 4 is provided to engage with leg portion 6 via ball and socket joint arrangement 12. When joined together, the engagement means are such as to allow relative axial movement between the portions in at least two axes, 14, 16, as illustrated, and more typically, around a plurality of further axes so as to allow the attitude of the respective portions to be selected by the child playing with the toy. This provides an articulated toy which has added realism compared to that of conventional toys of this type.

[0034] In accordance with the present invention, and with further reference to figures 6a and 6b, the engagement means can be in the form of a ball and socket joint as described above wherein the ball or protruding part 102 is substantially enclosed within the socket or recess part 104, as shown in figure 6a. In this arrangement, the friction between the ball and socket joint components is such so as to allow the same to be retained in a required position until further manual manipulation by a child. However if required the magnetically enhanced engagement means can be incorporated in this embodiment in the same manner as will now be described with the second embodiment.

[0035] Alternatively, in the second embodiment of the invention, the engagement means comprise a protrusion part in the form of a hemispherical protruding member 106 which is located only partially within concave recess part 108, as shown in figure 6b. This arrangement allows greater articulation between toy portions. In this embodiment, magnet 110 is located in member 106 and a magnetically attractive material such as steel or another suitable material is positioned adjacent recess part 108 respectively. The magnetic attraction ensures engagement between member 106 and recess part 108.

[0036] It will be appreciated that the provision of the magnetic attraction in the engagement means of the portions can be provided in the ball and socket arrangement in figure 6a and/or in any other embodiment described herein. Protruding member 106 can be formed, at least in part from magnet material if required.

[0037] In addition to the ability to alter the attitude of the relative portions, the ability to selectively detach the portions allows the same to be replaced with other portions which, although they may all depict the same design of head, body or legs, have a different appearance in terms of colour, texture or the like, thereby allowing the child to alter the visual appearance of the toy in accordance with the invention.

[0038] Figure 2a illustrates several toys, 8a to 8d, each of which are formed by the joining together of portions 2, 4, 6, with each of the portions typically selected by the child from a set of said portions provided as part of a toy kit. In the examples of toys in figure 2a, the type of engagement means, for example, the ball joint arrangement, is selected so as to allow the toy to stand when assembled. However, different engagement means can be provided with the toy to allow the toy to be moved to a sitting position or similar. For example, engagement means 9 for toy 8c in figure 2a has an arm member on one portion on which the other portion is pivotally attached, thereby providing increased movement of the portion about a particular axis. In addition, particular toy portions, such as the leg portion, can be provided with additional articulation means, such as, for example, to form a movable "knee" portion.

[0039] In accordance with the invention, a series of sets of toy portions can be provided for engagement to form a toy, the toy of each set differing in appearance, such as with respect to a particular pose or aesthetic appearance. Figure 2b illustrates the portions forming one set in one example. Figures 7a-7c illustrate portions forming three further sets in another example. Figures 3a and 3b illustrate other sets of toys, each having further accessories for attachment therewith to further increase the realism and interest of the toy to a child. For example, hand bags 16, scarves 18 and clothing 20 are provided for selective attachment with the toys to further alter the appearance of the toy as selected by the child. The portions and accessories of each toy set in figure 3a can be interchanged with corresponding portions from other sets when separated, as shown in figure 3b, to provide a large number of possible permutations of

the appearance of the toys.

[0040] The accessories can be attached to the toy by placing an accessory in a required position on a portion of the toy, whereupon the bringing together of the engagement means on adjacent portions traps the accessory in position on the toy until the engagement means are released. In addition or alternatively, the attachment can be via further magnetic engagement means.

[0041] In order to increase the ease with which a child can change the appearance of a toy, the sets of toy portions can be provided in a wardrobe type of arrangement. In figure 4, there is illustrated a carousel arrangement including three carousel members 114, 116, 118. Corresponding toy portions of each toy set are detachably attached to a carousel member. Thus, head portions 120, 122, 124 are attached to upper carousel member 114, torso and arm portions 126, 128, 130 are attached to middle carousel 116 and leg portions 132, 134, 136 are attached to lower carousel portion 118.

[0042] Each carousel member 114, 116, 118 is independently rotatable about axis 138, as shown by arrow 140. Carousel members 114, 116, 118 are rotatably connected in this example to axis 138 via support arms 140 (only support arms for upper carousel member 114 are shown for the purposes of clarity). A user typically rotates the members until the required appearance of each toy set is provided by alignment of the required portions. The resulting toy comprising the chosen set portions is then assembled by releasing the portions from the carousel members. This can be done manually by disengaging each portion individually within a particular alignment and re-engaging the portions together to form the toy via engagement means 144. Alternatively the aligned portions can be moved together by mechanical or electrical means. Once the portions are a predetermined distance apart, the magnetic attraction between the engagement means causes adjacent portions to snap fit or magnetically engage together.

[0043] Each plate member is typically formed from a series of windows or sections 146 to which the toy portions are detachably attached. This can be via clips, magnetic attraction and/or the like. Alignment of toy portions from each set can be random or controlled.

[0044] Referring to figure 5, there is illustrated a further wardrobe type of arrangement including a frame 148 in which plate members 150, 152, 154 are independently slidably located, as shown by arrows 156. In a similar manner to the carousel arrangement in figure 4, corresponding portions of each set are attached to a particular plate member and the plate members are slidably moved until the portions are aligned to form a toy with a required appearance. The portions of each aligned toy can then be manually fitted together or can be moved together for engagement as described above. In this embodiment, each section 158 of each plate member can be independently slidably movable if required. Thus, section 158' can be slid from the right side 160 of frame 148 and reinserted into the left side 162 of frame 148. Section 158" can then be slid along the frame to the right side 160 for alignment with section 158"' in plate member 152. The portions of the toys in either of the embodiments shown in figures 4 and 5 are three dimensional.

[0045] In one embodiment, the toys can be self standing on any surface so that the same may be used as a collectable range or the like and mounted for viewing. Alternatively, and in an embodiment now described, the toys can be provided to be used in conjunction with a playbase and/or walls of a play area on which the toys can be selectively positioned and, when the position is selected, retained in that position on the playbase in a manner that will be described hereonin by magnetic attraction between the playbase and or side walls which include magnets or magnetically attractive material therein and the toy which includes a magnet or magnetically attractive material.

[0046] Thus, the present invention provides a toy having interchangeable portions which can be engaged together in such a manner so as to allow articulation of the toy, thereby providing increased realism and a greater interest level to the child.

Claims

1. A toy, said toy including two or more portions, adjacent portions being detachably attached to each other via complementary engagement means and, when engaged, said portions forming the toy and **characterised in that** the complementary engagement means include a magnet in one of the portions and a magnetically attractive material in the other portion and the magnetic attraction between the same allows, at least in part, engagement of the adjacent portions to each other.

2. A toy according to claim 1 **characterised in that** the complementary engagement means include a protrusion member on one of said portions which engages in a recess on the other of said portions.

3. A toy according to claim 2 **characterised in that** the protrusion member is only partially enclosed by said recess when engaged therewith.

4. A toy according to claim 2 **characterised in that** the protrusion member is full enclosed by said recess when engaged therewith.

5. A toy according to claim 2 **characterised in that** the protrusion member and recess are in the form of a ball and socket joint.

6. A toy according to claim 1 **characterised in that** for each engagement means between portions a magnet is provided in, on or adjacent the engagement

means.

7. A toy according to claim 1 **characterised in that** the toy is formed from three portions ,a portion defining a human head, a second portion defining a human torso, and a third portion defining human legs and feet and at least two of the portions are selectively engaged via the engagement means of Claim 1.

8. A toy according to claim 1 **characterised in that** the magnetically attractive material is a metal.

9. A toy according to claim 1 **characterised in that** the magnetically attractive material is a magnet.

10. A toy according to claim 1 **characterised in that** one or more of the portions are formed from substantially flexible material.

11. A toy according to claim 1 **characterised in that** the toy is in the form of a character and the portions represent any or any combination of body parts, one or more garments, hair, accessories, or one or more articles attached to said character.

12. A toy according to claim 1 **characterised in that** a number of sets of portions are provided of different appearance and different portions from said sets can be detachably attached to each other to change the appearance of the toy.

13. A toy according to claim 12 **characterised in that** portions within each set, when engaged, form the toy.

14. A toy according to claim 13 **characterised in that** each set of portions are provided with movement means to allow movement of a portion of one set relative to a portion of another set.

15. A toy according to claim 14 **characterised in that** when two portions are moved within a pre-determined distance of each other via said movement means, said portions engage with each other due to the magnetic attraction of the engagement means.

16. A toy according to claim 15 **characterised in that** movement of said movement means is mechanically or electrically driven by a user.

17. A toy according to claim 15 **characterised in that** the movement means is in the form of a rotatable carousel and the portions are detachably attached to said rotatable carousel.

18. A toy according to claim 17 **characterised in that** the rotatable carousel is provided with two or more carousel members, each carousel member rotatable relative to an adjacent carousel member.

19. A toy according to claim 15 **characterised in that** the movement means is in the form of two or more plate members, each plate member movable relative to an adjacent plate member.

20. A toy according to claim 19 **characterised in that** the plate members are slidable relative to an adjacent plate member.

21. A toy according to claim 20 **characterised in that** the plate members are rotatable relative to an adjacent plate member.

22. A toy according to claim 1 **characterised in that** the engagement means allows selective positioning of the two or more portions with respect to at least two axes.

23. A toy according to claim 1 **characterised in that** the toy is provided for selective positioning with respect to a playbase and/or walls including magnetic or magnetically attractive material to interact with a magnet or magnetically attractive material in said toy.

24. A toy according to claim 23 **characterised in that** in addition to the selective positioning of the toy on the playbase, one or more other articles can be selectively magnetically engaged to said playbase and/or walls.

25. A toy kit, said toy kit including a number of sets of toy portions, said toy portions being detachably attached to each other via complementary engagement means and **characterised in that** the complementary engagement means of each portion includes a magnet and magnetically attractive material and the magnetic attraction of the magnetic material in each portion allows, at least in part, engagement of adjacent toy portions together.

26. A toy kit according to claim 25 **characterised in that** a playbase and/or walls are included onto which a toy can be selectively positioned.

27. A toy kit according to claim 25 **characterised in that** the sets of portions are provided with movement means to allow movement of a portion of one set relative to a portion of another set.

28. A toy, said toy including two or more portions, said portions being detachably attached to each other via complementary engagement means and, when engaged, said portions forming the toy and **charac-**

terised in that the engagement means, when engaged, allow selective positioning of the said two or more portions with respect to at least two axes.

29. A toy according to claim 28 **characterised in that** the engagement means include male and female engagement members and sufficient friction is provided between said members to ensure that, when the portions are moved to a selected position, the male and female members are retained in position until manually manipulated.

30. A toy according to claim 29 **characterised in that** the male and female engagement means are a ball and socket arrangement.

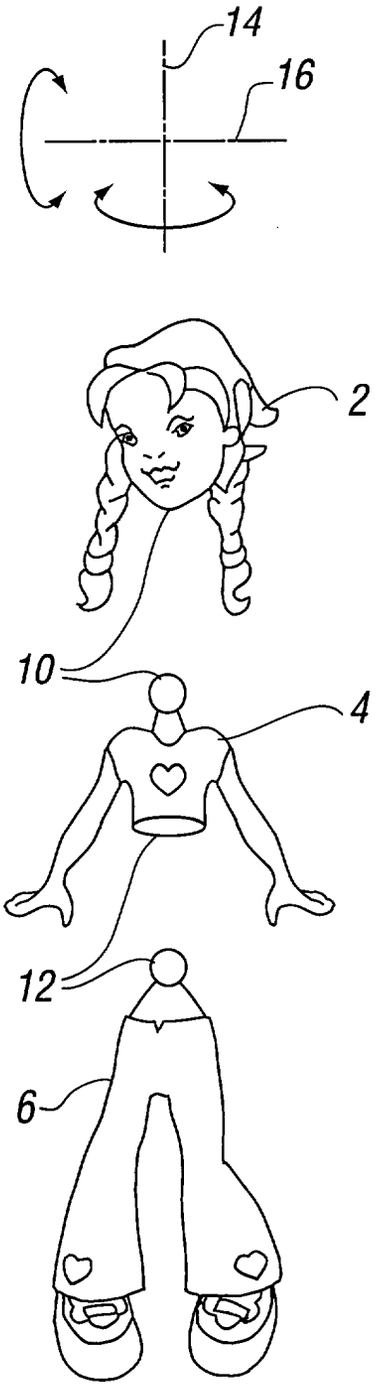

FIG. 1

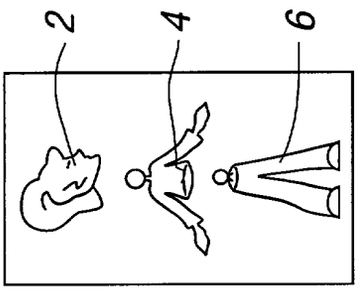

FIG. 2B

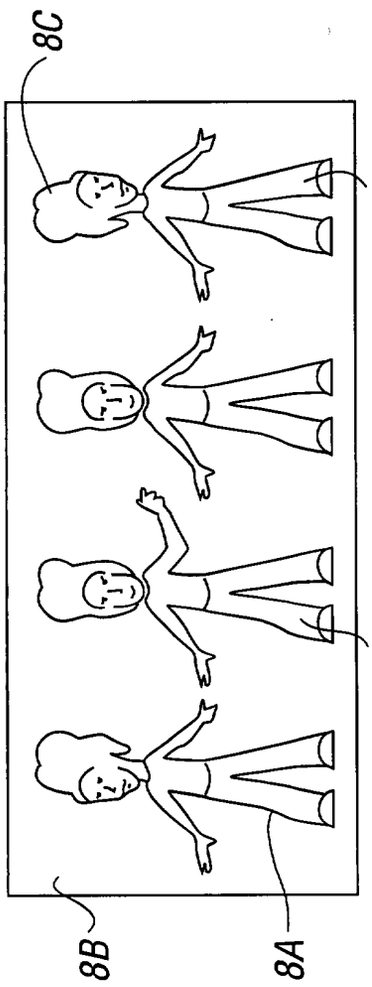

FIG. 2A

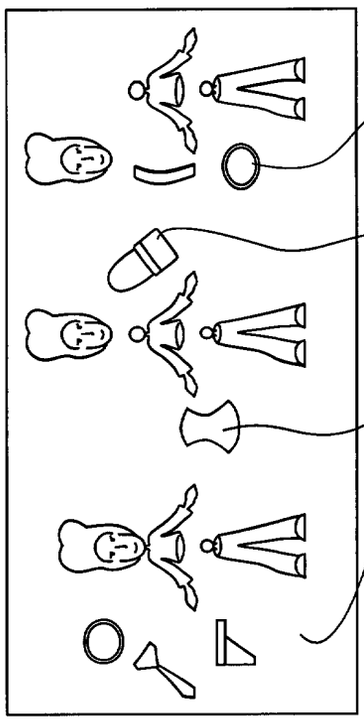

FIG. 3B

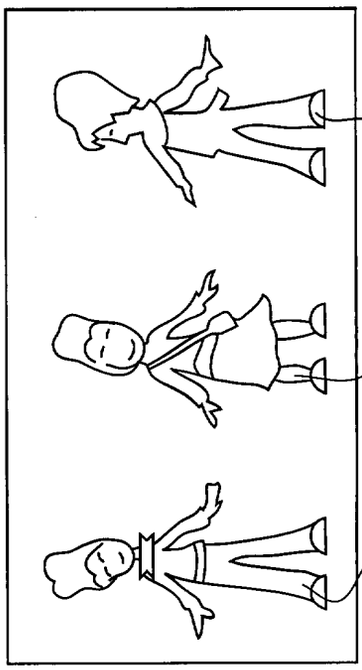

FIG. 3A

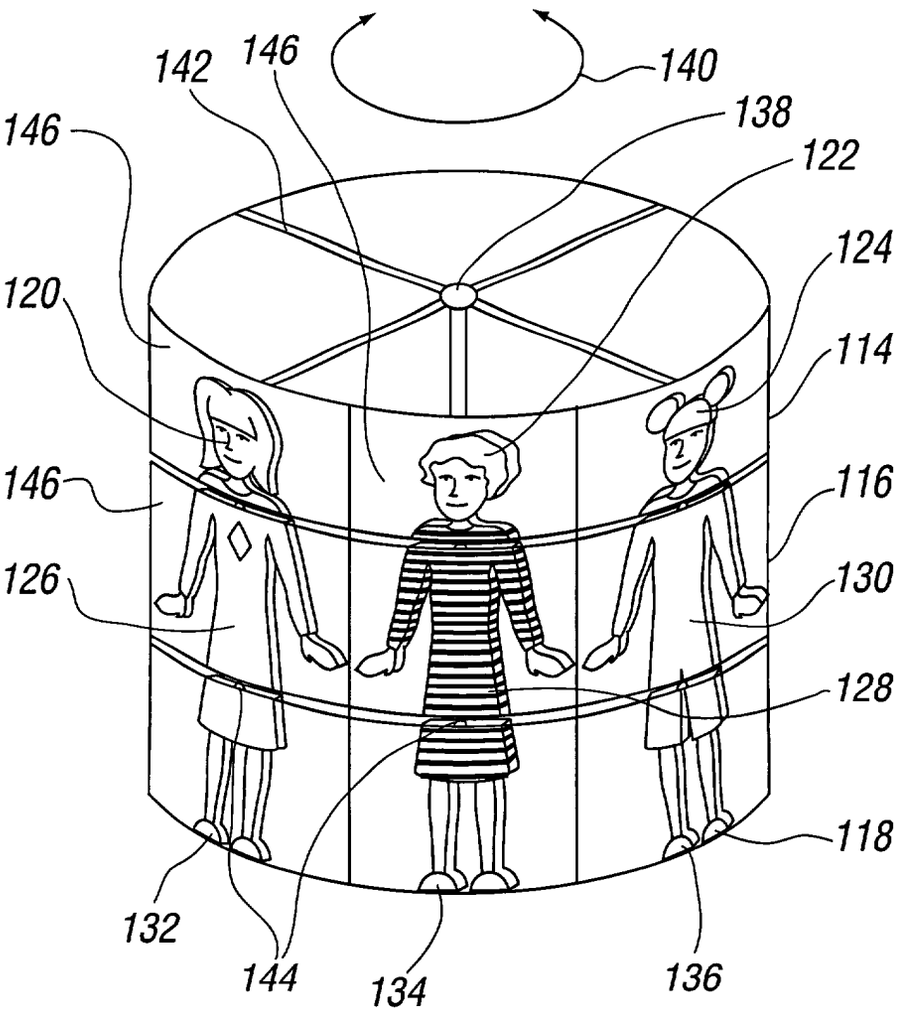
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FIG. 4

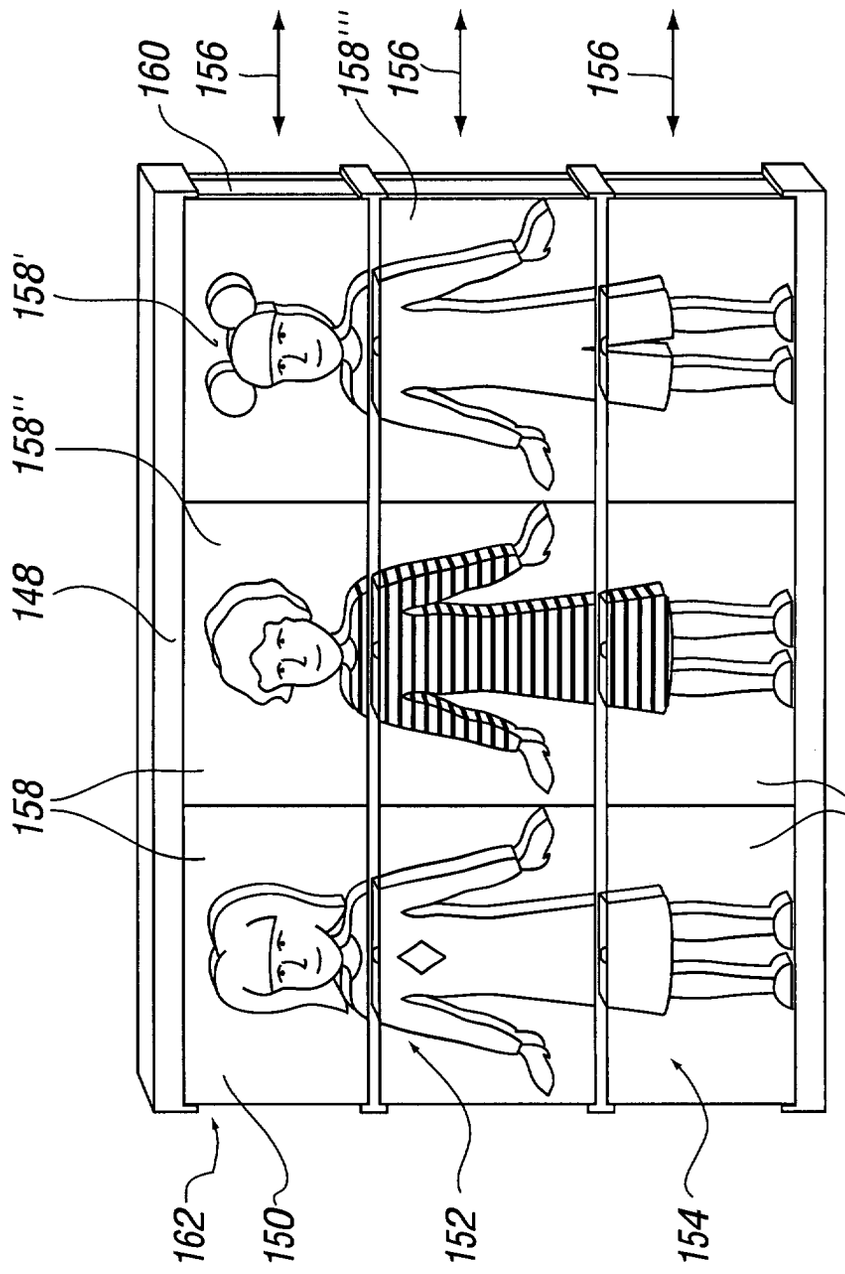

FIG. 5

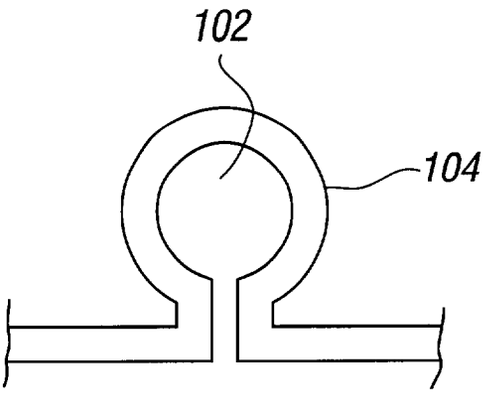

FIG. 6A

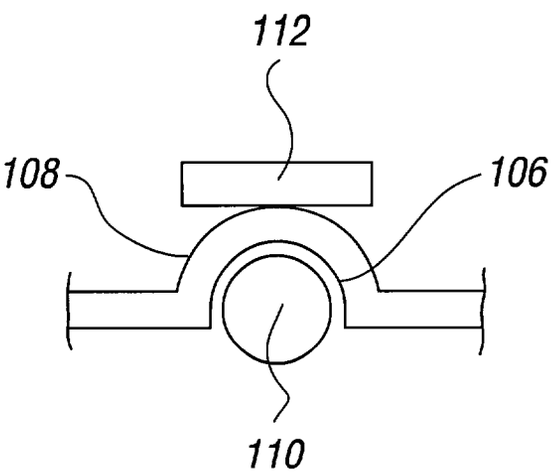

FIG. 6B

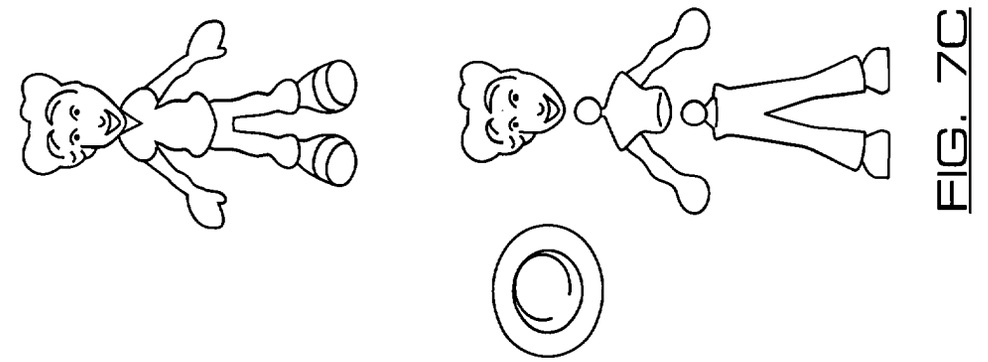

FIG. 7C

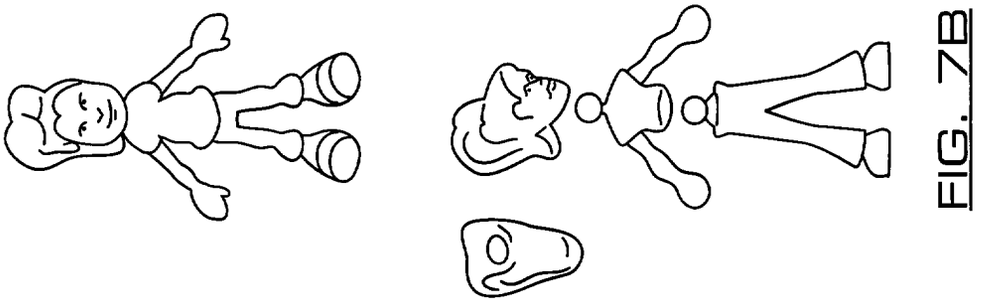

FIG. 7B

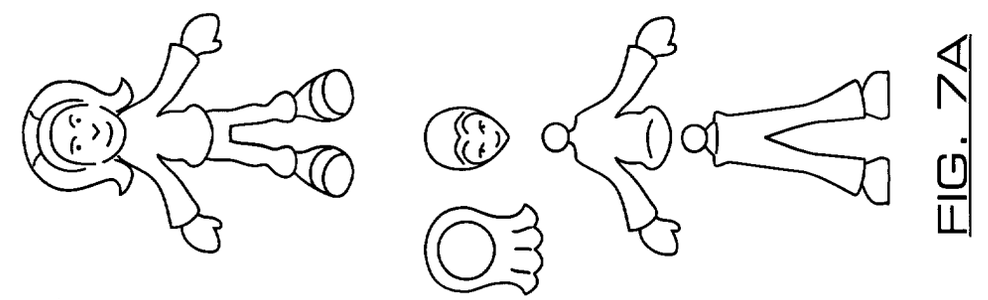

FIG. 7A