DOLLS HAVING MAGNETICALLY CONNECTED COMPONENTS

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This invention relates to dolls composed of separable and interchangeable parts, including body portions, arms and legs, which are magnetically connected together.

The primary object of the invention is the provision of dolls of the kind indicated, the interchangeability of whose components enables not only separation of components to facilitate dressing of the dolls, but giving the dolls different poses, involving different attitudes of their components, for greater interest and variety.

Another object of the invention is the provision of dolls of the character indicated above, which comprise upper body sections which have fixed neck members, over which different selected heads are interchangeably and loosely engageable, in a manner which practically eliminates the breakage at the neckline which is common to dolls having fixed heads.

A further object of the invention is the provision of dolls of the character indicated above, wherein circular component-connecting magnets project from components, which magnets are adapted to be engaged in socket assemblies, inset in other components, the socket assemblies being lined with magnetizable material, whereby the connected components abut each other, around the magnets, and make substantially invisible joints.

In the Drawings:

FIGURE 1 is a perspective view of a doll of the present invention;
FIGURE 2 is an exploded perspective view of the doll, showing its components separated;
FIGURE 3 is an enlarged fragmentary and exploded perspective view showing details of a magnet and socket assembly;
FIGURE 4 is an enlarged fragmentary vertical transverse section taken on the line 4--4 of FIGURE 1;
FIGURE 5 is a fragmentary vertical section taken on the line 5--5 of FIGURE 4;
FIGURE 6 is a view, like FIGURE 1, showing a different lower body section, different arms connected to the upper body section, and a different head.

Referring in detail to the drawings, and first to FIGURES 1 to 5 thereof, the doll therein shown comprises an upper body section or torso 10 which is hollow and is made of suitable material, such as plaster or other plastic material. The upper body section 10 has a vertically elongated, upstanding neck 12, which is longer than normal and terminates, at its upper end, in a convex hemispherical terminal 14.

The neck 12 rises from shoulders 16, wherein circular openings 18 are formed, which are formed, in their edges 20, with annular grooves 22, into which are securely engaged the lateral annular flanges 24, on the sidewalls 26 of pan-shaped inserts 28. The sidewalls 26 engage the edges 20, and the bottom walls 30 of the inserts are flush with flat annular surfaces 32 which surround the openings 18. The inserts 28 are magnetizable and are preferably steel stampings.

Circular, reduced diameter, relatively thick magnets 34 are positioned concentrically against the outer surfaces of the bottom walls 30 of the inserts 28, and are suitably fixed in place, as by means of rivets 36, which are passed through axial bores 38 and 40, in the magnets 34 and the bottom walls 30 of the inserts, respectively. The magnets 34 are formed with reduced diameter circular and concentric bosses 42 which extend outwardly therefrom.

The bosses 42 and the full diameter portions 44 of the magnets 34 are adapted to be received in relatively small magnetizable socket assemblies 46, adapted to connect hollow arms 48 to the upper body section 10, and in relatively large diameter socket assemblies 50, adapted to connect the upper body section to a hollow lower body section 52. The socket assemblies 46 and 50 are the same in construction and differ only in size and locations.

The socket assemblies 46 comprise openings 54 formed in the laterally inward sides of the arms 48, at the upper ends thereof, which are surrounded by flat annular surfaces 56. The openings 54 have edges 58 which are formed with annular grooves 60 into which are securely engaged the edges of magnetizable discs 62, which are laterally spaced from the surfaces 56. The edges 58 are formed, inwardly of the discs 62, with concentric annular steps 64, concentric with larger diameter intermediate steps 66, and relatively shallow concentric inner annular steps 68. The inner steps 68 open to the surfaces 56.

As shown in FIGURE 5, magnetizable sockets 70 have sidewalks 72 which are shaped to fit the steps 64, 66 and 68, and are conformably engaged therewith. The sockets 70 have bottom walls 74 which bear against and are suitably secured to the discs 62. The socket sidewalks 72 have lateral annular flanges 76, which engage in the inner steps 68, which are flush with the surfaces 56, and the flanges 76 have the same outside diameters as the bottom walls 30 of the inserts 28. With this arrangement, when the sockets 70 are engaged over the magnets 34, the surfaces 32 of the upper body section, and the surfaces 56 of the arms 48 are in flush engagement with each other, so as to make substantially invisible joints.

The upper body section 10 has a flat horizontal bottom edge 78, adapted for flush engagement with the flat edge 80 of a lower body section 52, which is of hollow construction like the upper body section. The lower body section 52 is formed with legs 84, positioned in spaced fore-and-aft positions, which extend downwardly from hips 86. The upper edge 80 of the lower body section 52, is preferably at waistline level.

The lower body section 52 is formed, in its upper end, with a circular upwardly facing opening 88, in which is set a disc 62a and a socket 70a, and a magnet assembly, including a magnet 34a is set into a downwardly facing opening 90 in the lower end of the upper body section, the components of which correspond in construction to those of the hereinabove described assemblies.

A different lower body section 52a, shown in FIGURE 6, whose legs 82a are in laterally spaced positions, is interchangeable with the lower body section 52 of FIGURES 1 to 5.

While the connections of the arms 48, of FIGURES 1 to 5, permit of their being differently positioned, relative to the upper body section 10, as extended forwardly or rearwardly, or upwardly or downwardly, greater variety and interest is obtainable by interchanging with the arms 48, other arms 48b, 48c, 48d, and 48f shown in FIGURE 6.

The arms 48 of FIGURES 1 to 5 are in relatively unobtrusive positions, whereas the arms 48a and 48b of FIGURE 6 are crooked.

Interchangeable heads 92, in FIGURES 1 to 5, and 92a, in FIGURE 6, are removable and loosely engageable over the terminals of the necks 12 and 12a, respectively, and these heads, while differing in hair arrangements 94 and 94a, respectively, are of similar hollow construction.

The heads comprise hollow substantially spherical skulls 96 having frontal face portions 98, including rearwardly extending chin portions 100, at their lower ends. The sidewalks 102 of the skulls 96 are formed upwardly,
from their lower edges, with inverted V-shaped notches 104, which open, at their bottoms, to a skull bottom opening 106, of a size and shape to conformably and loosely receive and pass into the skulls, the neck 12, of FIGURES 1 to 5, and the neck 12a of FIGURE 6, as shown in FIGURE 4.

What is claimed is:

1. A doll comprising a body having hollow components having flush meeting ends, said meeting ends being formed with openings having circular edges, a magnet assembly secured in one of said openings and projecting from the related meeting edge, a magnetizable socket assembly secured in the other opening and adapted to receive the magnet, said magnet assembly comprising a circular pan-shaped insert having a bottom wall and a sidewall extending into the opening, the edge of the opening being formed with an annular groove, said sidewall having a lateral flange secured in the groove, the bottom wall being flush with the related meeting end, and a circular magnet smaller in diameter than the insert and secured concentrically to its bottom wall, said socket assembly comprising a magnetizable disc secured in the edge of the related opening and spaced from the related meeting end, and a magnetizable socket having a sidewall engaged with the opening edge and a bottom wall secured to said disc, the sidewall of the socket conforming in shape to the magnet.

2. A doll comprising a body having hollow components having flush meeting ends, said meeting ends being formed with openings having circular edges, a magnet assembly secured in one of said openings and projecting from the related meeting edge, a magnetizable socket assembly secured in the other opening and adapted to receive the magnet, said magnet assembly comprising a circular pan-shaped insert having a bottom wall and a sidewall extending into the opening, the edge of the opening being formed with an annular groove, said sidewall having a lateral flange secured in the groove, the bottom wall being flush with the related meeting end, and a circular magnet smaller in diameter than the insert and secured concentrically to its bottom wall, said socket assembly comprising a magnetizable disc secured in the edge of the related opening and spaced from the related meeting end, and a magnetizable socket having a sidewall engaged with the opening edge and a bottom wall secured to said disc, the sidewall of the socket conforming in shape to the magnet, said magnet having a reduced diameter concentric boss on its outer end.

References Cited by the Examiner

UNITED STATES PATENTS

2,131,209 9/1938 Alstadt et al. .......... 46—164
2,695,950 11/1954 Zingone ................ 63—29
2,752,726 7/1956 Calverly ................ 46—22
2,756,540 7/1956 Cleaver ................ 46—164
2,975,497 3/1961 Budreck ................ 63—29
3,068,615 12/1962 Nassour ............... 46—161 X
3,090,155 5/1963 Gordon ................ 46—22
3,168,227 2/1965 Osmond ............... 46—161 X

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