ARTICULATED FIGURE TOY


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ABSTRACT

A joint structure for connecting parts of toy figures such as dolls. A first toy figure part has a concave portion at the joint and a second toy figure part has a convex portion at the joint. An intermediate joint member is disposed between the two figure parts at the joint. The intermediate joint member is generally cup-shaped to provide a convex side for matingly positioning in the concave portion of the one toy figure part and a concave side for matingly receiving the convex portion of the other toy figure part. A resilient member is interconnected between the toy figure parts on the interior thereof and extends freely through the intermediate member to hold the parts and the member together and give universal movement thereto.

9 Claims, 9 Drawing Figures
ARTICULATED FIGURE TOY

This is a continuation-in-part application of our co-pending application Ser. No. 402,393 which was filed Oct. 1, 1973 and entitled “Joint Structures for Figure Toys” now abandoned.

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to toy figures, manikins, jointed dolls and the like. Particularly, the invention is directed to providing a structure of the character described with new and improved joint means to articulate several members of the toy figure.

Hereinafore, joint structures of toy figures such as dolls, or the like, usually took the form of a ball and socket type joint with resilient means, such as a spring, holding the ball portion of one figure member in the socket of another figure member. The range of relative twisting or turning between the figure members was limited by the diameter of the ball or by providing other abutment means. This invention is directed to providing a new and improved joint structure of the character described having a greatly increased range of articulation between the several members of the toy.

A principal object, therefore, of the present invention is to provide a new and improved joint structure for connecting parts of figure toys such as dolls or the like to provide a wide range of articulation between the parts thereof.

Although the joint structure of the present invention is adapted for all sorts of toy figures, manikins, and the like, it is shown herein as in a doll construction having a range of action or articulation more human-like and of greater variety than those heretofore provided.

In the exemplary embodiment of the invention, the joint structure for connecting parts of toy figures includes a first toy figure part having a generally concave socket type portion at the joint.

A second toy figure part has a generally convex portion at the joint. At least one intermediate joint member is disposed between the first and second toy figure parts at the joint. The intermediate member is generally cup-shaped providing a generally convex side for matingly positioning in the concave portion of the first toy figure part and a generally concave side for matingly receiving the convex portion of the second toy figure part. Resilient means in the form of a rubber band is interconnected between the toy figure parts on the interior therethrough and extends freely through the intermediate member to hold the parts and the member together at the joint and give universal movement thereto. This joint is shown herein in opposite orientations in the waist area between the upper and lower torso portion of a doll as well as the neck area between the doll’s head and the upper torso portion and in the hip joints between the lower torso portion and the doll's legs. Of course, other joint areas are contemplated.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a toy figure in the form of a doll incorporating the joint structure of the present invention in the waist area and neck area of the doll;

FIG. 2 is a front elevational view of the doll of FIG. 1 in an erect position, on an enlarged scale, and partially in section to facilitate the illustration of the various joint structures of the doll;

FIG. 3 is a vertical section taken generally along the line 3—3 of FIG. 2;

FIG. 4 is a partial perspective view of the hip and waist joints of the doll, with the waist joint in an oblique articulated disposition;

FIG. 5 is an exploded view of the waist joint portions of the doll, with the upper torso portion of the doll in section at the joint;

FIG. 6 is a front perspective view of another form of articulated doll, generally in a seated position;

FIG. 7 is a view similar to that of FIG. 6, with the doll's head, arms, waist and hip joints in various positions of articulation;

FIG. 8 is a front view of the doll of FIGS. 6 and 7, which generally the right half thereof cut away and in section; and

FIG. 9 is a vertical section taken generally along the line 9—9 of FIG. 8.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings in greater detail and first to FIGS. 1–5, one form of the toy figure of the present invention is in the form of a doll, generally designated 10, having a head portion 12, an upper torso portion 14, a lower torso portion 16, a pair of arms 18 and a pair of legs 20.

The arms 18 are connected to the upper torso portion 14 by ball and socket type joints. Particularly, each arm 18 has a ball portion 22 in the shoulder area thereof disposed in socket forming apertures 24 in the shoulder areas of the upper torso portion 14. Resilient means in the form of a rubber band 26 is connected through apertures 28 in the inside areas of the ball 22 and spans the interior of the torso portion 14 from side to side thereof to hold the arms in the sockets 24 and give universal movement thereto.

The legs 20 are connected to the lower torso portion 16 by means of ball and socket type joints somewhat similar to those of the arms 18. Particularly, ball portions 30 are formed on the upper ends of the legs 20 and are received in socket forming apertures 32 in the lower torso portion 16. A rubber band 34 is connected about pins 36 on the inside of the ball portions 30 and spans the interior of the lower torso portion 16 side to side thereof to hold the legs in their sockets 32 and give universal movement thereto.

The novel joint structure of the present invention is incorporated both in the waist area and the neck area of the doll. Turning first to the waist area, the lower torso portion 16 has a generally concave socket type portion 38 formed on the top thereof. The upper torso portion 14 has a generally convex portion 40 formed on the bottom thereof. A cup-shaped intermediate joint member 42 is disposed between the upper and lower torso portions 14 and 16, respectively, at the waist joint. The cup-shape of the intermediate joint member 42 provides a generally convex bottom side thereof for positioning in the concave portion 38 of the lower torso portion 16. The intermediate joint member 42 is also provided with a generally concave upper side for receiving the convex portion 40 of the upper torso portion 14. The parts gradually increase in dimensions from the concave portion 38 of the lower torso to the intermediate joint member 42 to the convex portion 40 of the upper torso for increased articulation.

Resilient means in the form of a rubber band 44 interconnects the upper and lower torso portions by means of a pin 46 in the upper torso portion and a pin
48 in the lower torso portion about which the rubber band is wrapped, both pins being on the interior of the torso portions, and extending through an enlarged aperture 50 in the intermediate joint member 42 to hold the upper and lower torso portions and the intermediate joint member together at the joint and give universal movement thereto. The rubber band extends through an enlarged aperture 52 in the upper torso portion 14 and an aperture 54 in the lower torso portion 16.

By utilizing at least one of the intermediate joint members 50 a wide range of articulation in the form of twisting or turning motions is provided, much more than a simple ball and socket type joint. It is contemplated within the scope of the present invention that the intermediate member could be formed in the shape of a ball matingly received in opposed concave portions of the upper and lower torso portions of the doll.

A joint structure somewhat similar to that in the waist area of the doll is provided in the neck area of the doll as best seen in FIGS. 2 and 3. More particularly, the upper torso portion 14 of the doll is provided with a generally concave socket type portion 56 at the neck joint. The head portion of the doll is provided with a generally convex portion 58 at the neck joint. An intermediate joint member 60, similar to joint member 42 at the doll's waist, is provided between the upper torso portion 14 and the head portion 12. Again, the intermediate joint member 60 is generally cup-shaped to provide a convex lower side and a concave upper side for joining the concave portion 56 of the upper torso portion 14 and the convex portion 58 of the head portion 12, respectively. A rubber band 62 is wrapped about a pin 64 on the interior of the head portion 12 and a pin 66 within the upper torso portion 14. The rubber band extends through an enlarged aperture 68 in the head portion 12 and enlarged aperture 70 in the intermediate joint member 60, and an aperture 72 in the concave portion 56 of the upper torso portion 14. The rubber band 62 forms the resilient means for holding the head portion 12 and the upper torso portion 14 together at the joint and give universal movement thereto. Of course, other types of resilient means, such as springs, or the like, are contemplated by the present invention.

FIGS. 6 through 9 show another form of articulated doll, generally designated 80, having a head portion 82, an upper torso portion 84, a lower torso portion 86, a pair of arms 88 and a pair of legs 90.

The arms 88 are connected to the upper torso portion 84 by ball and socket type joints, somewhat similar to the doll of FIGS. 1 through 5. Particularly, each arm 88 has a rounded portion 92 in the shoulder area thereof disposed in socket forming apertures 94 in the shoulder areas of the upper torso portion 84. Resilient means in the form of a rubber band 96 is connected through enlarged apertures 98 at the inner extremities of the arm. The rubber band 96 spans the interior of the upper torso portion 84 from side to side thereof and is wrapped about posts 100 on the inside of the rounded portions 92 of the arms to hold the arms in the sockets 94 and give universal movement thereto.

The head 82 of the doll is connected to the upper torso portion 84 by a somewhat similar ball and socket type joint at the base of the doll's neck. Particularly, a rounded portion 102 at the base of the doll's neck is positioned within a concave socket 104 at the top of the upper torso portion 84 generally mating with the curvature of the rounded portion 102 at the base of the doll's neck. Resilient means in the form of a rubber band 106 is connected through apertures 108 and 110 in the doll's neck and upper torso portion, respectively. The rubber band spans the joint and is wrapped about a rod 112 on the inside of the doll's neck and a rod 114 on the inside of the upper torso portion 84. Rod 112 extends side to side within the doll's neck, and rod 114 is oriented generally front to rear within the doll's upper torso portion 84.

The novel joint structure of the present invention is incorporated both in the waist area and the hip areas of the doll shown in FIGS. 6 through 9. Turning first to the waist area, the joint structure is somewhat similar to the joint structure in the waist area of the doll shown in FIGS. 1 through 5, with certain modifications, including a reversal in the convex-concave orientation of the joint. More particularly, the lower torso portion 86 has a generally convex portion 116 with an aperture 118 therein. The socket for the upper torso portion 84 simply is an enlarged opening 120 about the lower extremity thereof. A cup-shaped intermediate joint member 122 is disposed between the upper and lower torso portions, with a generally central aperture 124 through the joint member. The cup-shape of the intermediate joint member 122 provides a generally concave bottom side thereof defining an opening 126 about its lower periphery. The opening 126 defines a socket for receiving the convex portion 116 of the lower torso portion. The intermediate joint member 122 thus also is provided with a generally convex upper side for positioning within the socket aperture 120 of the upper torso portion. A rod 128 is disposed within the lower torso portion generally front to rear thereof. Resilient means in the form of a rubber band 130 is positioned about the rod 114 in the upper torso portion and about the rod 128 in the lower torso portion so as to span the joint through the aperture 118 in the lower torso portion and the aperture 124 in the intermediate joint member 122.

A joint structure utilizing the intermediate cup-shaped joint member is provided in each of the hip areas of the doll shown in FIGS. 6-9 to give a wide range of articulation to the legs of the doll. More particularly, the upper extremity of each leg is provided with a rounded portion 132 forming a ball type joint member. The rounded portion has a generally central aperture 134 therethrough. The lower torso portion has in each hip a concave portion 136 forming a socket. The rounded portion 136 has an aperture 138. An intermediate cup-shaped joint member 140 is disposed between the rounded portion 132 of the leg and the concave portion 136 in the lower torso portion. The intermediate joint member 140 has an aperture 142 therethrough. Thus, the inside of the intermediate joint member 140 is convex for receipt within the concave socket 136 of the lower torso portion, and the outside of the intermediate joint member 140 is concave for receiving the rounded portion 132 at the upper extremity of the doll's leg. It might be noted that with this particular socket, the intermediate joint member 140 has a curvature so that the convex inner side thereof is generally matingly received substantially flush with the curvature of the concave socket portion 136 of the lower torso portion 86. Resilient means in the form of a rubber band 144 is wrapped about rod members 146 on the inside of the doll's legs and completely spans the inside of the lower torso portion from side to side thereof. The rubber band extends through the apertures 134 in
the doll's legs, the apertures 142 in the intermediate joint members 140 and the apertures 138 in the lower torso portion 86.

Resilient means is provided between the doll's head portion 82 and the upper torso portion 84 to normally bias the doll's head to a generally erect position. More particularly, a spring member, generally designated 150 is wrapped about the rod 112 within the neck area of the doll. One leg 150a of the spring is positioned through an aperture 152 in the concave socket portion 104 of the upper torso portion 84. The upper leg 150b of the spring is generally L-shaped and is seated within a recess 154 within the doll's head, generally above the chin area thereof. Thus, as the doll's head is moved back and forth as shown by the positions in phantom in FIG. 9, the spring 150 tends to bias the head back to the erect position shown by the full lines in FIG. 9.

The foregoing detailed description has been given for clearness of understanding only and no unnecessary limitations should be understood therefrom as some modifications will be obvious to those skilled in the art.

We claim:

1. A combination doll part and joint structure for connecting parts of toy figures or the like, comprising:
   a first toy figure part having a generally concave socket-type portion at said joint;
   a second toy figure part having a generally convex portion at said joint;
   at least one intermediate joint member disposed between said first and second toy figure parts at said joint, said member being generally cup-shaped providing a generally convex side for positioning in the concave portion of said first toy figure part, said convex side being the sole engagement of said member with said concave portion, and a generally concave side for receiving said convex portion of said second toy figure part, said concave side being the sole engagement of said member with said concave portion to provide for relative movement between both toy figure parts as well as between each part and said member; and
   retaining means interconnected between said toy figure parts to hold said parts and said intermediate member together at said joint and give universal movement thereto.

2. The combination of claim 1 wherein said retaining means is connected on the interior of said parts and extends freely through said intermediate member.

3. The combination of claim 1 wherein said toy figure is a doll having an upper torso portion and a lower torso portion with said joint therebetween, said concave socket-type portion being formed on one of said torso portions and said convex portion being formed on the other of said torso portions with said intermediate member disposed between the torso portions.

4. The combination of claim 3 wherein one of said torso portions has an opening therein for receiving the convex side of said intermediate joint member for engagement therewith about the marginal edge of the opening.

5. The combination of claim 1 wherein said toy figure is provided with a head and a torso, said concave socket type portion being formed on one of said head and torso and said convex portion being formed on the other of said head and torso with said intermediate member disposed therebetween.

6. The joint structure of claim 1 wherein said first toy figure part has an opening therein for receiving the convex side of said cup-shaped intermediate joint member for engagement therewith about the marginal edge of the opening.

7. The combination of claim 1 wherein the concave socket type portion of said first toy figure part and the convex side of said intermediate joint member have similar curvature providing a generally flush engagement therewith.

8. A combination doll part and joint structure for connecting parts of toy figures or the like, comprising:
   a first toy figure part having a rounded portion at said joint;
   a second toy figure part having a rounded portion at said joint;
   an intermediate joint member disposed between said first and second toy figure parts at said joint, said member having complementary rounded portions for receiving the rounded portions of said first and second toy figure parts, the rounded portions of said intermediate joint member being in a spaced relationship with the rounded portion of at least one of said first and second toy figure parts so as to have an edge engagement therebetween to provide for increased relative movement between both toy figure parts as well as between each part and said member; and
   retaining means interconnected between said toy figure parts to hold said parts and said intermediate member together at said joint and give universal movement thereto.

9. The combination of claim 8 wherein said retaining means is connected on the interior of said parts and extends freely through said intermediate member.

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