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S. HERZOG

2,618,896

JOINTED DOLL

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FIG. 1.

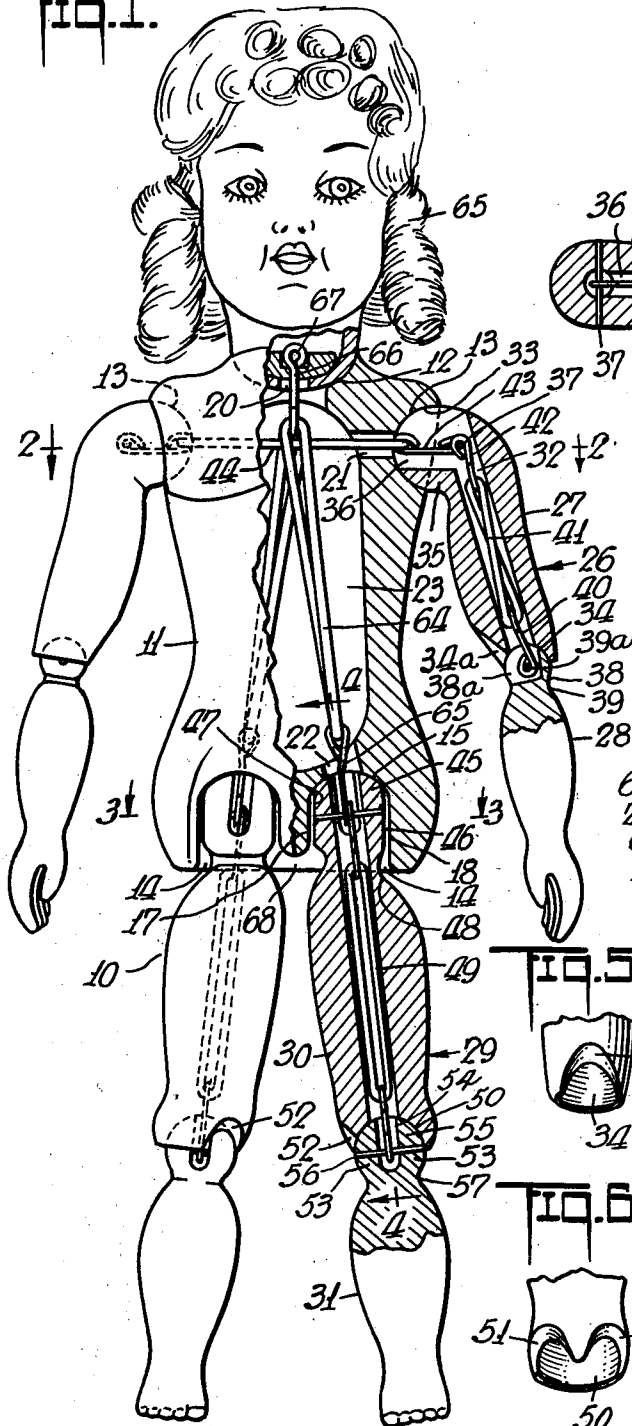


FIG. 2.

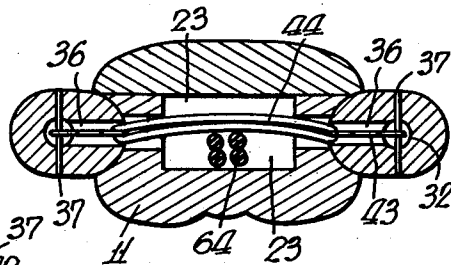


FIG. 3.

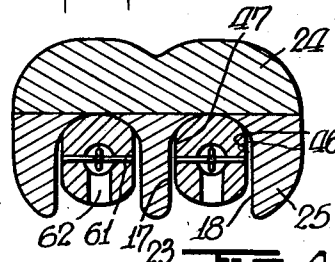


FIG. 4.

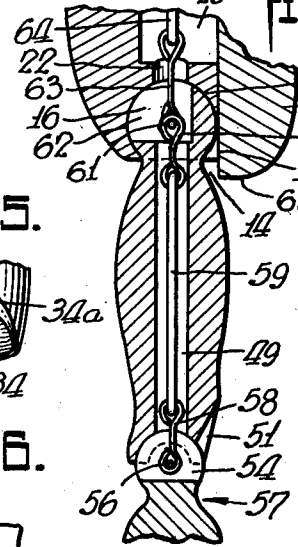


FIG. 5.

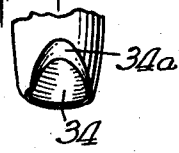
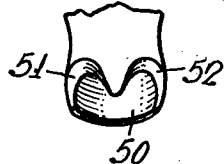


FIG. 6.



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JOINTED DOLL

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4 Claims. (Cl. 46-161)

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This invention relates to dolls and like jointed toys and to a joint for articulating the limbs thereof with respect to segments thereof, and to the torso to which the limbs are attached.

My invention concerns itself with toy figures such as dolls or like simulation of living bodies which involve a torso portion and limbs which may be set in various positions with regard to each other and the torso.

My invention has as its objective the provision of a toy figure and mannikin having a torso provided with limb sockets and in which limbs are independently attachable to the torso, in which each of the limbs may be independently articulated and assembled, and affixed to the torso by jointed construction which makes assembly of the parts economical and adjustment to secure the desired position of the limbs may be accomplished with facility.

More specifically, my invention resides in providing a toy figure in which limb sockets are provided for independent attachment of the limbs, wherein each limb has terminal or distal segments and intermediate segments coupled by a joint which permits articulation of the segments in respect of each other, the segments being jointed and held in frictional engagement for articulation from a single anchor member or pull pin, whereby the same expedient which holds the segments of the limb in adjustment frictionally may be employed for assembly of the limb to the torso of the toy, whereby an economical assembly is provided for manufacture, repair, adjustment or replacement.

My invention still more particularly is concerned with the provision of a figure whereby articulation of the limbs with regard to the torso or the limb segments with regard to each other may be produced, to provide a figure or mannikin which, when costumed, has a naturalness of appearance in various adjusted positions and in which articulation is effected by a joint which is of low cost construction.

To attain these objects and such further objects as may appear herein, or be hereinafter pointed out, I make reference to the accompanying drawing forming a part hereof, in which—

Figure 1 is a plan view of a doll illustrating my invention, with portions thereof sectioned to disclose details;

Figure 2 is a section taken on the line 2—2 of Figure 1;

Figure 3 is a section taken on the line 3—3 of Figure 1;

Figure 4 is a fragmentary section taken on the line 4—4 of Figure 1;

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Figure 5 is a fragmentary perspective view of the arm joint or elbow socket;

Figure 6 is a fragmentary perspective view of the leg joint or knee socket.

Summarizing my invention, it is intended by me to provide a toy, doll or mannikin in which a torso portion has assembled to it limbs which may be articulated with regard to the torso and in which an economical assembly is provided by a joint construction of the segments of the limbs, permitting an independent assembly of the limbs before assembly with the torso for independence of attachment and adjustment of the articulated joints of the limbs so that the tension or force which holds the limbs to the torso does not affect the force of friction for articulation of the segments of the limbs, and in which the joints are of ball and socket construction, in which a variety of adjusted positions may be assumed by the toy in the limb segments. Particularly, my invention aims to produce a low cost construction whereby economies are effected by the use of a simple number of parts in manufacture, adjustment and repair.

Making reference to the drawing, my invention is illustrated in the form of a doll 10 having a torso 11, provided with a head socket 12 and shoulder sockets 13 which are partly spherical in contour. Hip sockets 14 include a partly spherical seat 15, a transverse clearance portion 16, flattened bearing portions 17 and 18, and a stop apron 19. A passage 20 is provided for the neck socket 12; passages 21 are provided for the shoulder sockets 13; passages 22 are provided for the hip sockets 14, leading to a common cavity 23 which may be made accessible by the back cover plate 24 so that the torso 11 is made from a two part construction comprising the rear cover plate 24 and the front body portion 25.

The limbs in the form of arms 26 comprise an upper segment 27 and a lower segment 28. For convenience the upper segment will be referred to as an intermediate segment. The legs 29 likewise are made with an intermediate segment 30 and a distal segment 31. The arm intermediate segment 27 has an axial longitudinally extended passage 32, running from a generally ball shaped coupling element 33 to the spheroidal socket coupling element 34. An angular offset segment 35 disposes the ball portion 33 from the arm and is provided with a transverse passage 36. The intermediate segment 27 is provided with a counter pull pin 37 which is driven in a position transversely of the ball element common to the passages 32 and 36.

The passage 32 extends to the socket portion

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34 in which there may be seated the distal segment 28, having a ball shaped coupling 38, merging into the body portion thereof and connected by a neck portion 39 which is constricted to provide clearance in articulation of a magnitude of about 60°. A supplemental clearance slot 34a is formed in the intermediate segment. A transverse slot 38a is formed in the ball coupling element. A counter pull pin 39a is affixed substantially diametrically of the ball coupling 38 to lie axially coincident with the passage 32 of the intermediate arm segment 27.

The arm 26 may be assembled preliminarily and independently by a link 40 having an eye at opposite ends thereof, one of which loosely engages the counter pull pin 39a, the other loop anchoring the elastic cord 41 in the form of a continuous closed band or ring whose upper end is provided with the link 42 formed with opposed loops, eyes or hooks, one of which engages the counter pull pin 37. The counter pull pin 37 is provided with a shoulder link 43 whose opposed loops, eyes or hooks loosely engage the pin 37 and breast elastic cord 44 in band form. The elastic cord 44 joins the limbs across the chest to each other through the cavity 23. The links 40 and 43 each may be formed of malleable wire for ready adjustment in making the connecting loops.

The limbs 29 have the intermediate segment 30 thereof formed with a ball coupling 45, having flattened faces 46 and 47 for engagement with the flattened faces 17 and 18, respectively, of the socket 15. A constricted neck portion 48 on the segment 30 between the ball coupling 45 and the body of the segment 30, as well as a tolerance in size of the flattened portions 46 and 47 with respect to the walls 17 and 18 permits articulation of the intermediate segment 30 for a wide angle substantially to position the limb segment 30 at right angles to the torso forwardly, with a limited degree of movement sidewise.

A longitudinal passage 49 extends through the ball coupling 45 to the knee socket 50 which is formed of generally parti-spheroidal contour. Clearance cutouts 51 and 52 are provided at the rear and inner side of the segment 30 adjacent the socket 50. The distal segment 31 is formed with a ball coupling 53 complementary to the socket 50 and is provided with a slot 54 to outline the spaced sections 55 supporting the counter pull pin 56 which is positioned substantially diametrically of the ball 53. In coupled position the counter pull pin 56 is aligned with the passage 49.

The ball coupling element 53 merges into the body of the segment 31 by a constricted neck 57 which allows for a large angle articulation in excess of almost 60° and an articulation of almost 90° in the direction of the clearance sections 51 and 52.

With the assembly thus provided, a link 58 has its opposed loops engaging loosely the counter pull pin 56 and the elastic cord 59 which is extended through the passage 49 to engage the link 60 mounted upon the counter pull pin 61 transversely of the ball coupling element 45. A cross slot 62 provides clearance for the link 63, the opposed loops of which are mounted respectively on the counter pull pin 61 and the elastic cord 64. The elastic cord 64 is joined to the head 65 through the link 66 engaging a pin 67 in the neck of the head, to hold the ball shaped coupling thereof seated on the socket 12 previously described.

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It will be observed that each of the limbs has a terminal or distal segment and an intermediate segment coupled by a joint which may be articulated independently, and that the intermediate segment has a ball and socket coupling in which the ball element of the intermediate segment has a counter pull pin serving as the anchoring means for a tension member or elastic cord running through the passage thereof to the distal or terminal segment. The employment of the counter pull pin as a common connecting means for the tension cord 41 and 59 for the limbs to the distal or terminal portions 28 and 31, respectively, permitting of independent tensioning of the ball and socket coupling of each of these members for frictional articulation of the terminal or distal segment of the limb independently of the frictional contact supplied in holding the limb in the respective sockets 13 and 15 for connection of the limbs to the torso by the elastic cords or tensioning members 44 and 64, respectively.

It will be observed that by my construction employing the flattened relationship of the ball 45 in the socket 15 to limit the movement of the legs by contact with the flattened surfaces 17 and 18, a life-like, normally seated position of the limbs to the torso may be secured, exposing the rump portion 68 to balance the doll in a seated position.

By my construction, articulation of high magnitude may be secured with a simple number of parts. A realistic adjustment of the limb and limb parts may be secured, permitting dolls, toys or mannikins to be costumed and displayed in a life-like pose. A low cost and highly articulable fixture is provided in which the joint segments may be provided with the requisite friction for adjustment to assume a desired pose without disturbing the condition of other jointed couplings.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent, is:

1. In a toy figure having a torso provided with limb sockets, the combination having independently attachable limbs, each limb having terminal and intermediate segments coupled by a joint in articulated relationship, the intermediate segments each having an axially directed passage throughout its length which merges into socket and ball coupling elements at opposite ends thereof, counter pull pins affixed diametrically transversely of the ball element of said intermediate segment and joint and intersecting the said passage, and an elastic tensioning cord member extended in said passage of said intermediate segment coupled at its opposite ends to said pins by a link looped over the pins for articulation of the distal segments relatively to the intermediate segments in a universal direction about said pin portion.

2. In a toy figure having a torso provided with limb sockets, the combination having independently attachable limbs, each limb having terminal and intermediate segments coupled by a joint in articulated relationship, the intermediate segments each having an axially directed passage throughout its length which merges into socket and ball coupling elements at opposite ends thereof, counter pull pins affixed diametrically transversely of the ball element of said intermediate segment and joint and intersecting the said passage, and an elastic tensioning cord member extended in said passage of said intermediate segment coupled at its opposite ends to said pins, said coupling being effected by freely slidable

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links and the socket portion having clearance cutouts for receiving the shank of the links providing independent, wide range articulation of the coupling.

3. In a toy figure having a torso provided with limb sockets, the combination having independently attachable limbs, each limb having terminal and intermediate segments coupled by a joint in articulated relationship, the intermediate segments each having an axially directed passage throughout its length which merges into socket and ball coupling elements at opposite ends thereof, counter pull pins affixed diametrically transversely of the ball element of said intermediate segment and joint and intersecting the said passage, and an elastic tensioning cord member extended in said passage of said intermediate segment coupled at its opposite ends to said pins and passing through passages in the ball element leading to the pin, said terminal segments each having a ball element being integrally formed on the terminal segments connected to the segments by restricted neck portions, providing wide angle articulation of the socket and ball coupling elements to each other.

4. In a toy figure having a torso with limb sockets, the combination having independently attachable distal and intermediate segments coupled by a joint in articulated relationship, the intermediate segment having an axially directed passage throughout its length which merges into

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socket and ball coupling elements at opposite ends thereof, said socket and ball coupling elements of the torso and limb having relatively flattened portions to limit the transverse movement to narrow angles, counter pull pins affixed diametrically transversely of the ball element of said intermediate segment and joint and intersecting the said passage, and an elastic tensioning member extended in said passage of said intermediate segment coupled at its opposite ends to said pins, the joint coupling the intermediate segments and distal segments having clearance cutouts at the inner side allowing for articulation of almost 90° where, by articulation of the distal segment to this limit, the torso may be erectly balanced in the seated position thereof.

SAM. HERZOG.

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