Feb. 5, 1957 H. R. BEEBE 2,780,030

TOY FIGURE WITH ARTICULATED LEG MEMBERS

Filed April 2, 1954 2 Sheets-Sheet 1

FIG. 1.

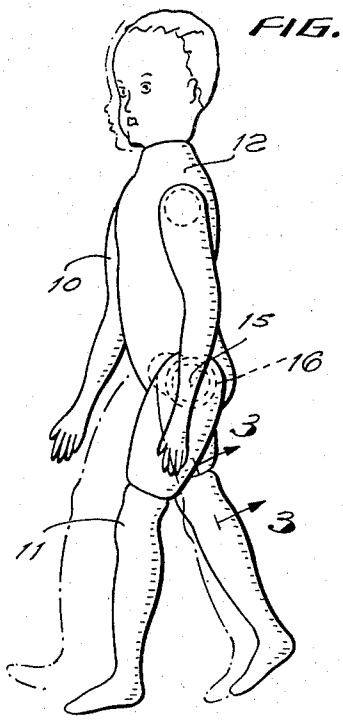


FIG. 2.

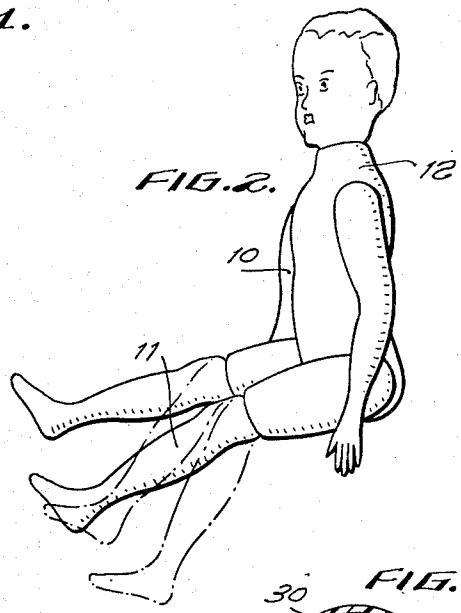
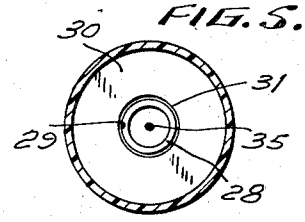


FIG. 5.



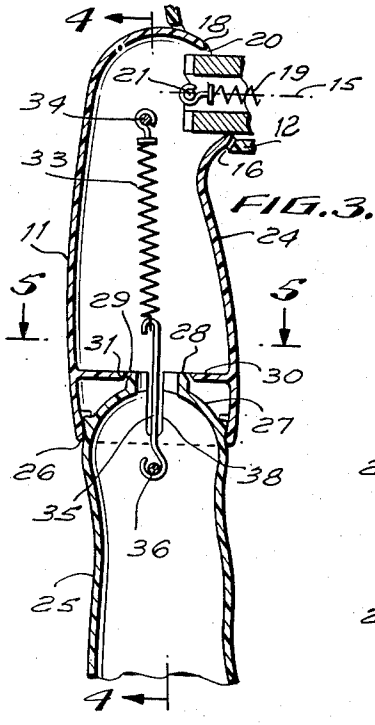


FIG. 3.

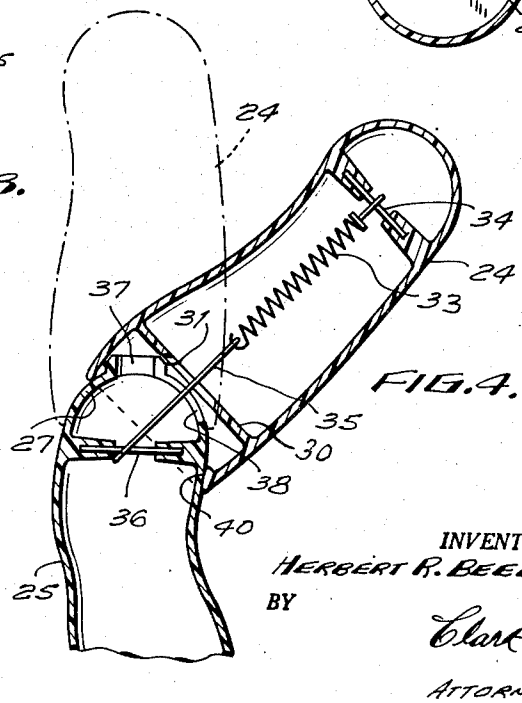


FIG. 4.

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Feb. 5, 1957 H. R. BEEBE 2,780,030

TOY FIGURE WITH ARTICULATED LEG MEMBERS

Filed April 2, 1954 2 Sheets-Sheet 2

FIG. 6.

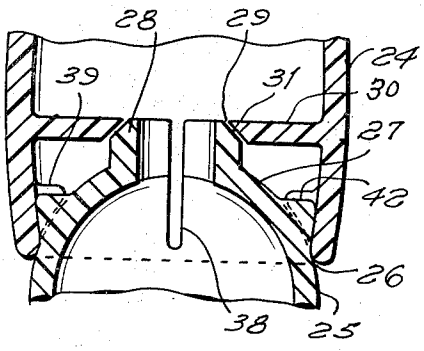


FIG. 10.

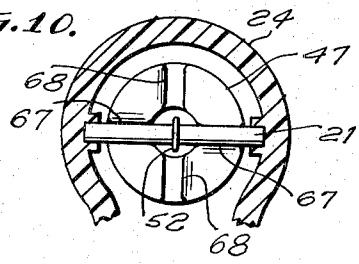


FIG. 9.

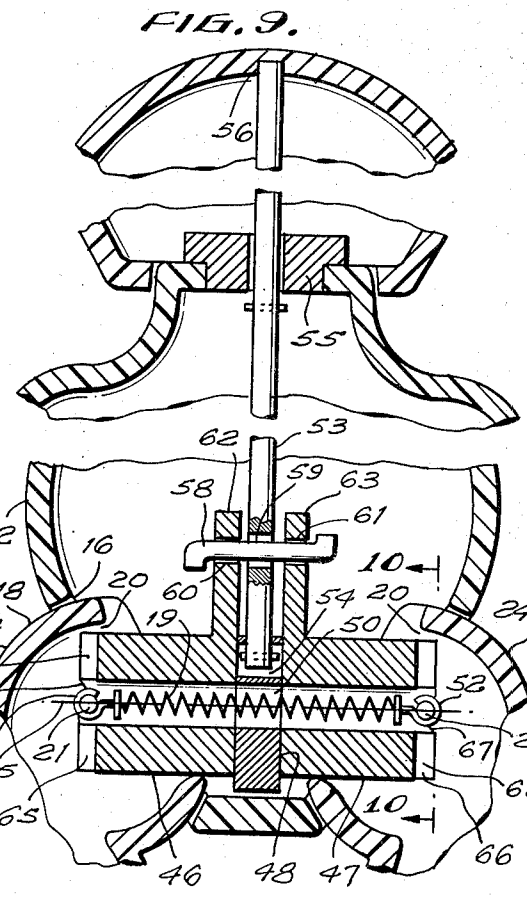


FIG. 7.

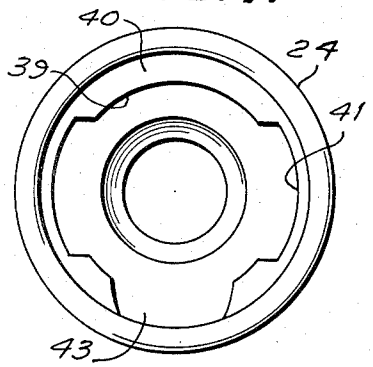
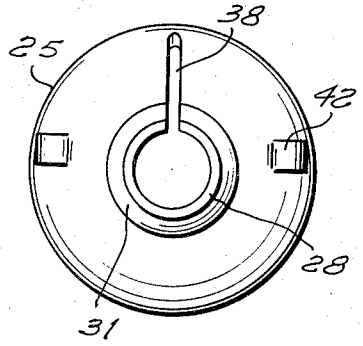


FIG. 8.



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United States Patent Office 2,780,030 Patented Feb. 5, 1957

2,780,030

TOY FIGURE WITH ARTICULATED LEG MEMBERS

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Application April 2, 1954, Serial No. 420,632

2 Claims. (Cl. 46—161)

This invention relates to a toy figure.

An object of the invention is to provide a toy figure in which the leg members are so constructed and arranged that the toy figure may be manipulated to provide walking movement and may also be disposed in a seated position.

Another object of the invention is to provide a toy figure having leg members connected with the body thereof for relative movement and which leg members include parts which are connected together for relative movement and may be interconnected for conjoint movement.

Another object of the invention is to provide a toy figure such as a doll having leg members which are connected with the body of the doll for swinging movement and which include upper and lower hingedly connected parts adapted for relative movement thereof to permit of disposing the doll in a seated position with the lower parts of the leg members arranged in depending relation and which parts have interengageable means by which the parts are interconnected for conjoint swinging to simulate walking movement.

Still another object of the invention is to provide a doll of said character in which the upper and lower parts of the leg may be readily interconnected for conjoint movement and which may be readily released for independent swinging movement.

With the foregoing and other objects in view, reference is now made to the following specification and accompanying drawings in which the preferred embodiment of the invention is illustrated.

In the drawings:

Fig. 1 is a view in elevation of a doll having leg members constructed in accordance with the invention and showing the doll in a walking position.

Fig. 2 is a similar view with the doll shown in a seated position.

Fig. 3 is an enlarged vertical sectional view of the upper and lower parts of one of the legs of the doll with the lower part of the leg fragmentarily shown and the parts interconnected for conjoint movement.

Fig. 4 is a similar view showing the upper and lower parts of the leg released and the upper part of the leg swung to a position for disposing the doll in a seated relation.

Fig. 5 is a sectional view taken approximately on line 5—5 of Fig. 3.

Fig. 6 is an enlarged fragmentary vertical sectional view similar to Fig. 3 showing the joint between the upper and lower leg portions.

Fig. 7 is a lower end view of the upper leg portion.

Fig. 8 is a top end view of the lower leg portion.

Fig. 9 is an enlarged fragmentary sectional view showing the upper portions of the legs connected with the body of the doll for walking movement.

Fig. 10 is a fragmentary vertical sectional view taken approximately on line 10—10 of Fig. 9.

Referring to the drawings by characters of reference, the toy figure is in the form of a doll in which the arms

10 and the legs 11 are connected with the body 12 to permit of articulate swinging movement thereof. The body 12 as well as the arms and legs are of hollow formation with socket openings into which the arms and legs extend for connecting the same therewith. The legs 11 are connected with the body to simulate walking when the doll is moved over a supporting surface so that the feet alternately engage the same and when one foot is in bearing engagement with the supporting surface the other leg will be moved from a rearward position to a forward position. For this purpose, the legs have forward and rearward swinging movement with reference to the body 12 on a horizontal axis indicated by the reference character 15 extending centrally through the socket openings 16. The legs are formed with rounded upper ends 18 which project into the openings 16 to form ball and socket joints and which legs are connected together and with the body 12 in any desired manner. As illustrated, the legs are connected together by a coil spring 19 which extends through the body and through openings 20 in the upper ends of the legs with the ends of the springs looped about cross bars 21 secured to the legs adjacent the openings 20. The spring 19 connects the legs with the body of the doll and draws the same into tensioned engagement with the socket openings 16 while permitting of relative movement of the legs.

The legs of so-called walking dolls are of unitary construction and do not bend at the knees whereby the legs have a stiff swinging movement from the connection thereof with the body. Furthermore, the legs of such dolls extend forwardly in an awkward stiff position when the doll is disposed in a seated relation. In order to provide in a walking doll means whereby the doll may be disposed in a seated position with the lower part of the legs thereof disposed in depending relation, the legs 12 in the embodiment illustrated include upper and lower leg portions 24 and 25 which are connected together by ball and socket joints at the knees. The upper leg portion 24 of each leg is formed with a substantially circular opening 26 at the lower end thereof in which the rounded upper end 27 of the lower leg portion 25 is fitted. The rounded upper end 27 of the lower leg portion 25 is provided with a cylindrical extension 28 which projects upwardly from the top thereof and which is adapted to engage in an opening 29 in a transversely extending partition wall 30 formed integrally with the upper leg portion 24 to thereby interconnect the upper and lower leg portions together for conjoint movement. The extension 28 is provided with a chamfered peripheral edge 31 at the top thereof while the edge defining the opening 29 is of upwardly tapered formation corresponding substantially to the chamfered peripheral edge 31. This provides means by which the extension 28 may be cammed out of engagement in the opening 29 by downward swinging movement of the lower leg portion 25.

The upper and lower leg portions 24 and 25 of the legs are secured together in any desired manner, and as illustrated, a coil spring 33 is provided for each leg which is swivelly connected at its upper end to a cross bar 34 affixed to the upper leg portion 24 and at its lower end is connected to a wire 35 which is looped at its lower end about a cross bar 36 affixed to the lower leg portion 25. The wire 35 extends through the opening 29 in the partition wall 30 and through the central opening 37 in the cylindrical extension 28. The spring thus tensions the leg portions so as to draw the rounded upper end 27 of the lower leg portion into tensioned engagement in the socket opening 26 and secures the parts together to permit of relative swinging movement thereof in the ball and socket connection. The rounded upper end 27 of the lower leg portion of each of the

legs is formed with a slot **38** which extends from the opening **37** in the extension **28** a short distance downwardly and rearwardly therefrom. By this construction the extension **28** will snap into the opening **29** in the partition wall **30** when the lower leg portion is disposed in substantial alignment with the upper leg portion and the leg portions will then have conjoint swinging movement whereby the doll may be manipulated to simulate walking movement. When the lower leg portion is swung rearwardly on the hinge connection with the upper leg portion, the rounded upper end **27** of the lower leg portion is rocked so as to cam the extension **28** out of engagement in the opening **29**. By this movement also the slotted portion **38** is moved upwardly so that the wire **35** projects therethrough, as shown in Fig. 4 of the drawings. The rounded upper ends **27** of the lower leg portions **25** of each of the legs have bearing engagement against a wall portion **39** extending about the inner periphery of the circular opening **26** of the upper leg portion **24** and which wall portion has an arcuate face **40** corresponding to the curvature of the rounded upper end **27** of the lower leg portion **25**. The wall portions **39** are recessed at opposite sides as at **41** to receive lugs **42** projecting outwardly from the lower leg portions **25** which lugs have limited movement in the recesses **41** when the lower leg portion is turned about a vertical axis to thereby limit the turning movement of the lower leg portion. The wall portion **39** is also recessed at the front as at **43** to accommodate the extension **28** when the lower leg portion **25** is turned as indicated in Fig. 4 of the drawings.

The legs **11** may be connected with the body **12** in any desired manner for swinging movement to simulate walking, and as illustrated in Fig. 9 of the drawings, aligned tubular members **46** and **47** are provided which are arranged with the outer ends thereof extending into the openings **20** in the rounded upper ends **18** of the legs and with the inner ends of the tubular members disposed in engagement with an abutment or fixed intermediate member **48**. The coil spring **19** extends axially through the tubular members and through a central opening **50** in the intermediate member with the cross bars **21** positioned in notches **51** and **52** in the ends of the tubular members respectively. The legs are thus retained in inward tensioned relation in the socket openings **16** which permits relative movement thereof.

In order to provide means for effecting movement of the legs in opposite directions, an upstanding rod **53** is provided which is pivoted at its lower end in a socket **54** in the intermediate member **48** with the upper portion thereof extending through a block **55** in the neck portion of the doll and with the extreme upper end of the rod extending into a socket opening **56** in the head. A cross member **58** extends through an opening **59** in the rod **53** and through openings **60** and **61** in upstanding projections **62** and **63** formed integrally with the tubular members **46** and **47** respectively and which extend upwardly therefrom in parallel relation when the legs **11** are disposed in upright parallel relation.

It will be understood that by this construction movement of one of the legs forwardly, for instance the right leg as shown in Fig. 9 of the drawings, will effect rotation of the tubular member **47** to thereby turn the cross member **58** with a consequent rearward movement of the left leg, and vice versa. In order to position the upper portions of the legs **11** for disposing the doll in seated position, the tubular members **46** and **47** are provided with notches **65** and **66** which are located substantially at 90° to the notches **51** and **52**. The notches **51** and **52** have beveled or cam portions **67** and the notches **65** and **66** have beveled or cam portions **68** to permit of the cross members **21** moving out of one set of notches into the other when the legs of the doll are

swung for disposing the doll in seated relation and in position for walking movement. The spring **19** retains the cross members in the notches but permits of movement of the legs to cam the cross members out of the notches against the tension thereof when the legs are rotated as hereinbefore described.

The body **12** of the doll together with the arms and legs are constructed of any desired hard or compressible material which will retain the normal form thereof.

While the preferred embodiment of the invention has been illustrated and described herein, it is to be understood that the same is not so limited but shall cover and include any and all modifications thereof which fall within the purview of the invention.

What is claimed is:

1. In a toy figure, a body, a pair of legs connected with the body for independent swinging movement, said legs each having upper and lower leg portions, said upper leg portion of each of the legs having an open lower end providing a socket, said lower leg portion of each of the legs having a rounded upper end interfitting the opening in the upper leg portion to form a joint therewith, said upper leg portion of each of the legs having a transversely extending partition spaced from the lower end and provided with an opening therethrough, said lower leg portion of each of the legs having an upwardly extending projection adapted to fit into the opening in said partition, said lower leg portion of each of the legs having an opening extending through said projection and communicating with a slot in the rounded upper end thereof, and resilient means secured to the upper and lower leg portions and extending through said opening in said projection for connecting the upper and lower leg portions of each of the legs together for conjoint swinging movement when said projection is disposed in the opening in said partition and permitting of relative swinging movement of the lower leg portion of each of the legs to cam said projection out of said opening when the toy figure is in seated relation.

2. In a toy figure, a body, a pair of legs connected with the body for independent swinging movement, said legs each having upper and lower leg portions, said upper leg portion of each of the legs having an open lower end providing a socket, said lower leg portion of each of the legs having a rounded upper end interfitting the opening in the upper leg portion to form a joint therewith, said upper leg portion of each of the legs having a transversely extending partition spaced from the lower end and provided with an opening therethrough, said lower leg portion of each of the legs having an upwardly extending projection adapted to fit into the opening in said partition, said lower leg portion of each of the legs having an opening extending through said projection and communicating with a slot in the rounded upper end thereof, resilient means secured to the upper and lower leg portions and extending through said opening in said projection for connecting the upper and lower leg portions of each of the legs together for conjoint swinging movement when said projection is disposed in the opening in said partition and permitting of relative swinging movement of the lower leg portion of each of the legs to cam said projection out of said opening when the toy figure is in seated relation, and said upper leg portions of each of the legs having recesses on the inner periphery of the open lower ends thereof and said lower leg portions of each of the legs having lugs adapted to fit said recesses to limit the turning of the lower leg portions arcuately about a vertical axis.

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