Aug. 22, 1961 H. R. BEEBE 2,996,838

WALKING DOLL

Filed June 25, 1959 2 Sheets-Sheet 1

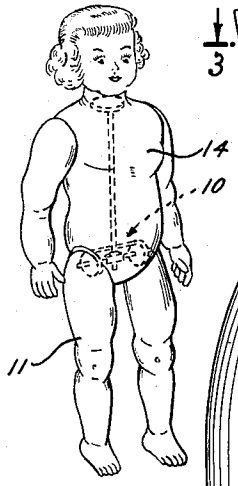


FIG. 1

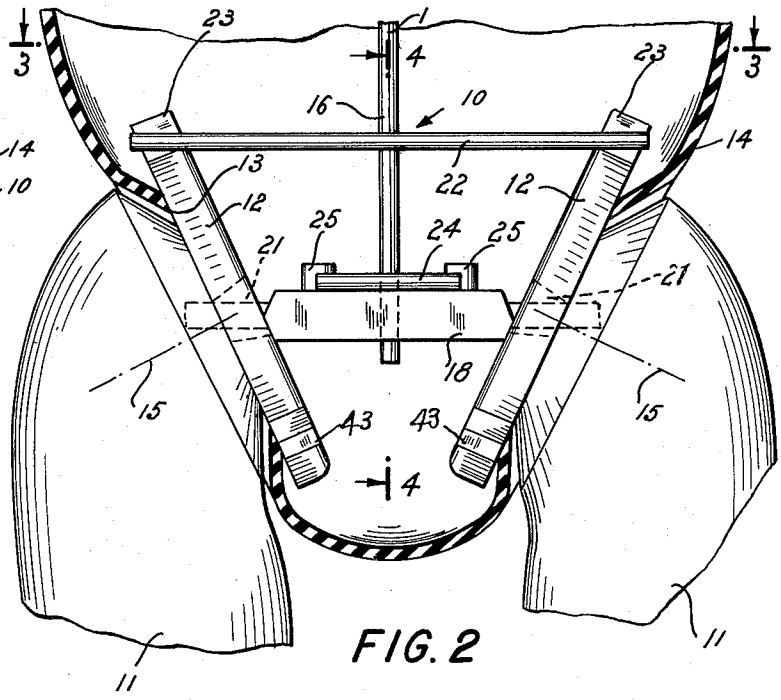


FIG. 2

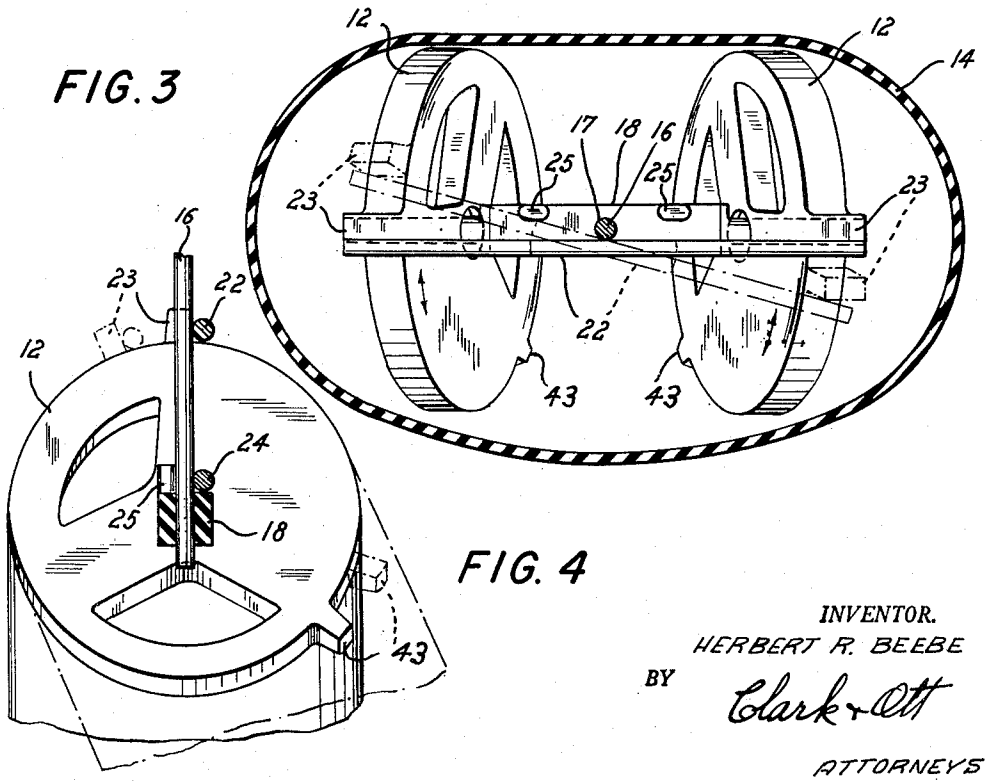


FIG. 3

FIG. 4

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Aug. 22, 1961 H. R. BEEBE 2,996,838

WALKING DOLL

Filed June 25, 1959 2 Sheets-Sheet 2

FIG. 5

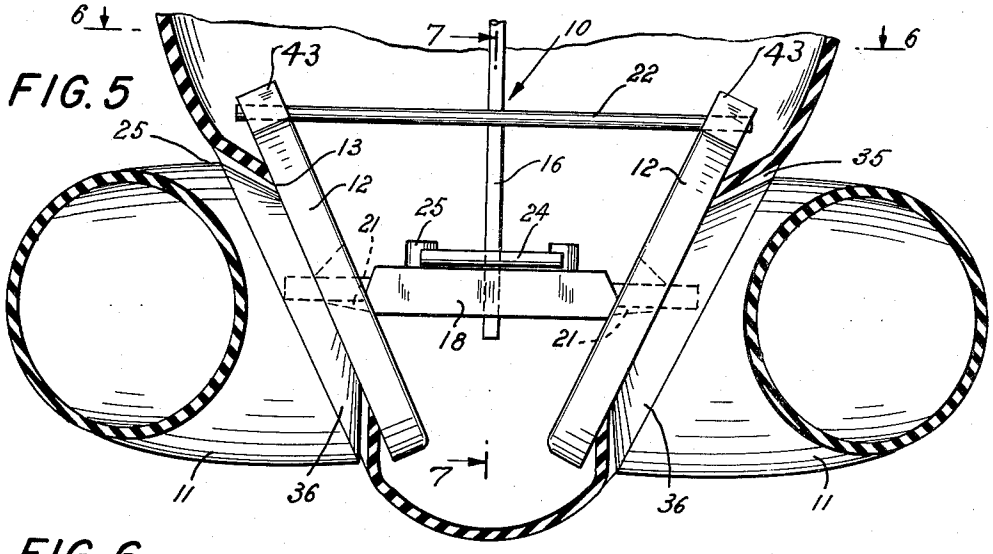


FIG. 6

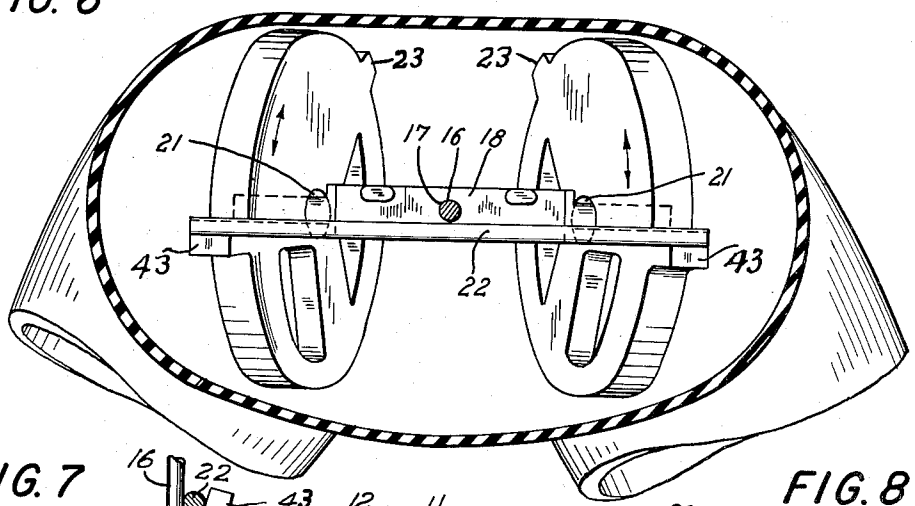


FIG. 7

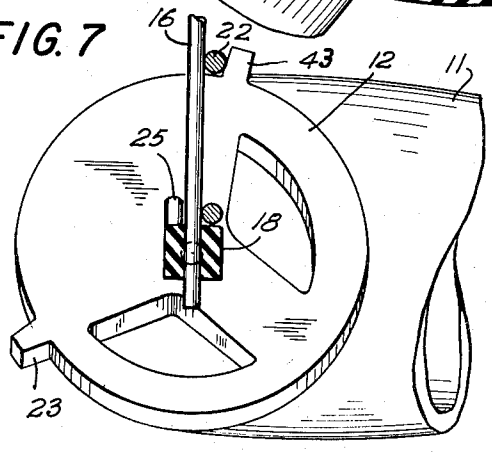
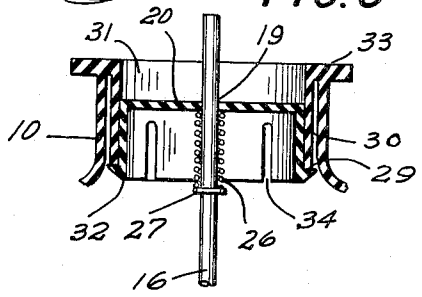


FIG. 8



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WALKING DOLL

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3 Claims. (Cl. 46—149)

This invention relates to walking dolls.

An object of the invention is to provide a leg moving mechanism which may be readily inserted in a completed doll body or torso of integral construction.

Leg moving mechanisms heretofore employed have necessitated the use of at least a two part doll body or torso which could be secured together after the arrangement of the mechanism within the parts thereof. The present invention comprehends the use of a doll body in which the body or torso and the legs are fashioned of material which inherently maintains the shape and form thereof but which permits of deforming or expanding of said parts in order to connect the parts together. The invention, therefore, provides a leg moving mechanism which is constructed and arranged for insertion in a doll body or torso of integral construction and which is connected with the legs during the assembly of the legs with the body or torso and before the head is applied thereto.

Still another object of the invention is the provision of means on the legs within the doll body which is unconnected with the leg moving mechanism to thereby permit of swinging movement of the leg independently of the leg moving mechanism and which is adapted to be engaged thereby to effect forward swinging movement of one of the legs when the other leg is swung rearwardly.

A further object of the invention is to provide a leg moving mechanism which is so constructed that when one of the legs is swung rearwardly the other leg swings forwardly and vice versa and the legs have turning movement about a solid cross shaft without the necessity of utilizing spring means biasing the legs into assembled relation or connecting the legs with the moving mechanism.

Still another object of the invention is to provide a leg moving mechanism for a doll of said character in which the legs are freely movable from a standing to a seating position.

Still another object of the invention is the provision means connected the leg moving mechanism with the upper portion of the doll body or torso.

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 provided with leg moving mechanism constructed in accordance with the invention.

FIG. 2 is an enlarged fragmentary sectional view of the doll body and upper portion of the legs together with the lower portion of the leg moving mechanism.

FIG. 3 is a transverse sectional view taken approximately on line 3—3 of FIG. 2.

FIG. 4 is a fragmentary sectional view taken approximately on line 4—4 of FIG. 2.

FIG. 5 is a view similar to FIG. 2 showing the leg moving mechanism when the legs are disposed in seated relation.

FIG. 6 is a transverse sectional view taken approximately on line 6—6 of FIG. 5.

FIG. 7 is a fragmentary sectional view taken approximately on line 7—7 of FIG. 6.

FIG. 8 is a fragmentary vertical sectional view showing the means connecting the leg moving mechanism with the upper portion of the body or torso of the doll.

Referring to the drawings, the invention provides a leg moving mechanism 10 for effecting forward movement of either one of the legs 11 when the other leg 11 has rearward movement. The leg moving mechanism 10 is interconnected with enlarged upper ends 12 of the legs which are located inwardly of the leg openings 13 in the body 14 so as to retain the legs in connected relation with the body. The legs are mounted for swinging movement on axes indicated by the broken lines 15 respectively which are located in right angular relation to the plane of the enlarged upper ends 12.

The body 14 and legs 11 are of hollow formation and the leg moving mechanism 10 includes an upright rod 16 mounted for turning movement at its lower end in an opening 17 in a cross shaft 18 and at its upper end in an opening 19 in a member 20 secured in the neck opening. The cross shaft 18 protrudes through frusto-conical shaped openings 21 located centrally in the enlarged upper ends 12 of the legs with the said openings tapering outwardly and downwardly on the axes 15 whereby the legs have swinging movement on said axes with reference to the cross shaft 18. Affixed to the rod 16 is a cross member 22 which projects laterally over the enlarged upper ends 12 forwardly of radially arranged projections or lugs 23 formed on the peripheries thereof.

The ends of the cross member 22 are disposed in engagement with the forward faces of the lugs 23 when the legs are in upright relation and when either one of the legs is moved rearwardly as in walking movement, the enlarged upper end 12 thereof will be rotated in its leg opening 13. The lug 23 thereof will move forwardly to effect forward swinging of one end of the cross member 22 with a consequent turning of the rod 16 and rearward swinging of the other end of said cross member. This will effect rotation of the enlarged upper end 12 of the other leg member in its leg opening 13 so as to move the lug 23 thereof rearwardly to thereby swing the other leg member forwardly.

In addition to the aforesaid walking movement, the legs may be swung forwardly in substantially right angular relation with the body of the doll into a seating position. In order to limit this movement of the legs, the enlarged upper ends 12 are formed with radially arranged lugs 43 which are arcuately spaced from the lugs 23 and engage against the ends of the cross member 22 when the legs are in said seating position to thereby prevent further upward swinging movement of the legs with reference to the body.

In order to limit the turning movement of the leg moving mechanism 10 so as to permit of limited swinging movement of the leg members forwardly and rearwardly, a cross member 24 is affixed to the rod 16 in parallel relation with the cross member 22. Upwardly extending projections 25 are provided on the cross shaft 18 at the rear of the cross member 24 to thereby limit the rearward swinging of said cross member. The cross member 24 is biased against the upper face of the cross shaft 18 by a coil expansion spring 26 and the projections 25 arranged one on each side of the rod 16 are spaced from the ends of the cross member 24 when the legs are in normal standing position. When either one of the legs is swung rearwardly so as to rotate the leg moving mechanism 10, the cross member 24 abuts against one or the other of the projections 25 to limit the turning movement of the leg moving mechanism and thereby the forward and rearward walking movement of the legs.

The coil expansion spring 26 is arranged on the rod 16 in tensioned relation between a collar 27 affixed thereon and the top wall 27 of the member 20 to bias the rod 16 downwardly and the member 20 upwardly against the lower annular edge 29 of a downwardly extending peripheral wall 30 providing a neck opening 31 in the upper

portion of the doll body. The member 20 closely fits the neck opening 31 and terminates in a flange 32 at its lower end which is biased by said spring against said annular edge 29. The peripheral wall 30 is formed integrally with the doll body and depends from the flanged upper end 33 thereof in spaced relation from the body wall. The flange 32 and the annular wall of the member 20 are formed with a plurality of circumferentially spaced slitted portions 34 which permit of flexing thereof for convenient engagement of the member 20 in the neck opening.

The wall of the doll body 10 flares outwardly from the leg openings 13 to thereby form a frusto-conical socket 35 for each leg outwardly of the leg opening. Each of the leg openings is of annular formation and the legs adjacent the enlarged upper ends 12 thereof are formed with inwardly tapered frusto-conical portions 36 which rotatably fit the frusto-conical sockets 35 of the body. The enlarged upper ends 12 of the legs are disposed against the peripheral edges of the leg openings whereby the projections or lugs 23 are spaced from the wall of the body and the legs have substantially free turning movement in the leg openings on the axes 15 respectively.

The body 14 and the legs 11 are fashioned of material which inherently retains the shape and form thereof but which is sufficiently deformable to permit of the expansion of the leg openings 13 for inserting the enlarged upper ends 12 of the legs into position within the doll body for retaining the legs and the body in connected relation, it being understood that the body 14 returns to its original formation after assembly of the legs therewith.

The construction of the leg moving mechanism 10 and the association thereof with the legs is such as to permit of the insertion of the leg moving mechanism with the assembly of the legs with the body 14. This is effected by assembling one of the doll's legs with the body 14, then inserting one end of the cross shaft 18 in the opening 21 in the enlarged end 12 of said leg, after which the other end of the cross shaft is inserted in the opening 21 in the other leg and this leg assembled with the doll body 14. The rod 16 together with the cross members 22 and 24 is inserted through the neck opening into position in the doll body with the lower end thereof pivoted in the opening 17 in the cross shaft 18 after which the coil expansion spring 26 is positioned on the rod 16 and the member 20 inserted in the neck opening 31 to thereby tension the spring and close the neck opening with the upper end of the rod pivoted in the opening 19. This provides means by which the leg moving mechanism may be inserted in a doll body after the doll body has been fully formed and which permits of free independent movement of either one of the legs and movement of the legs to seating position independently of the walking mechanism as well as movement of the legs simulating walking movement.

While the preferred form of the invention has been shown 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 walking doll, a hollow doll body having openings in the opposite sides at the lower end thereof, leg members fitting said openings for turning movement and having enlarged upper ends disposed within the doll body and arranged in planes parallel with the planes of the said openings respectively, said enlarged upper ends extending radially beyond said openings for retaining said leg members in connected relation with the body, leg moving mechanism located within said body and including a cross shaft mounted at its ends in central openings in the said enlarged upper ends for relative movement of said leg members with reference thereto, a rod located centrally within the doll body and mounted for turning movement in said cross shaft and in means in the neck of the body, a cross member affixed to said rod and projecting over said enlarged upper ends of the leg members, said enlarged upper ends having radially projecting lugs formed on the peripheries thereof respectively to extend upwardly adjacent to and at the rear of the ends of said cross member whereby when either one of said leg members is swung rearwardly the enlarged upper end thereof will be rotated so that the lug thereof will engage said cross member and swing said leg moving mechanism to thereby rotate the enlarged upper end of the other leg member to effect forward swinging movement thereof, and said enlarged upper ends having radially projecting lugs disposed in arcuately spaced relation from said first mentioned lugs and adapted to engage said cross member with the forward and upward swinging of said leg members to thereby limit the upward movement of said leg members to dispose said leg members in seated relation.

2. In a walking doll, a hollow doll body having openings in the opposite sides at the lower end thereof, leg members fitting said openings for turning movement and having enlarged upper ends disposed within the doll body and arranged in planes parallel with the planes of the said openings respectively, said enlarged upper ends extending radially beyond said openings for retaining said leg members in connected relation with the body, leg moving mechanism located within said body and including a cross shaft mounted at its ends in central openings in the said enlarged upper ends for relative movement of said leg members with reference thereto, a rod located centrally within the doll body and mounted for turning movement in said cross shaft and in means in the neck of the body, a first cross member affixed to said rod and projecting over said enlarged upper ends of the leg members, said enlarged upper ends having radially projecting lugs formed on the peripheries thereof respectively to extend upwardly adjacent to and at the rear of the ends of said first cross member whereby when either one of said leg members is swung rearwardly the enlarged upper end thereof will be rotated so that the lug thereof will engage said first cross member and swing said leg moving mechanism to thereby rotate the enlarged upper end of the other leg member to effect forward swinging movement thereof, said enlarged upper ends having radially projecting lugs disposed in arcuately spaced relation from said first mentioned lugs and adapted to engage said first cross member with the forward and upward swinging of said leg members to thereby limit the upward movement of said leg members to dispose said leg members in seated relation, a second cross member affixed to said rod to extend laterally in substantially parallel relation with said first cross member, means biasing said rod downwardly to dispose said second cross member in biased engagement against said cross shaft, and means carried by said cross shaft adapted to be engaged by said second cross member to limit the turning of said rod and thereby the forward and rearward swinging movement of said leg members.

3. In a walking doll, a hollow doll body having openings in the opposite sides at the lower end thereof, leg members fitting said openings for turning movement and having enlarged upper ends disposed within the doll body and arranged in planes parallel with the planes of said openings respectively, said enlarged upper ends extending radially beyond said openings for retaining said leg members in connected relation with the body, leg moving mechanism located within said body and including a laterally extending member mounted in fixed relation within said body adjacent the lower end thereof, a rod located centrally within the doll body and mounted for turning movement in said laterally extending member and in the upper end of the doll, a first cross member affixed to said rod and projecting over said enlarged upper ends of the leg members, said enlarged upper ends having radially projecting lugs formed on the peripheries thereof respectively to extend upwardly adjacent to and

at the rear of the ends of said first cross member whereby when either one of said leg members is swung rearwardly the enlarged upper end thereof will be rotated so that the lug thereof will engage said first cross member and swing said leg mechanism to thereby rotate the enlarged upper end of the other leg member to effect forward swinging movement thereof, a second cross member affixed to said rod to extend laterally in substantially parallel relation with said first cross member, means biasing said rod downwardly to dispose said second cross member in biased engagement against said

laterally extending member, and means carried by said laterally extending member adapted to be engaged by said second cross member to limit the turning of said rod and thereby the forward and rearward swinging movement of said leg members.

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