Jan. 24, 1956 E. D. HARROWE 2,731,768

INFLATABLE TOY DEVICE

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FIG. 1.

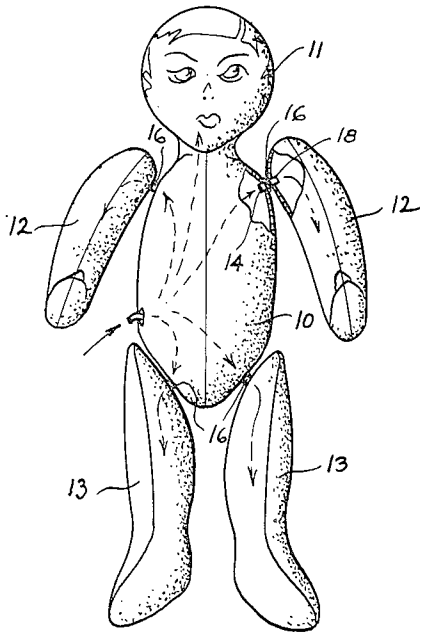
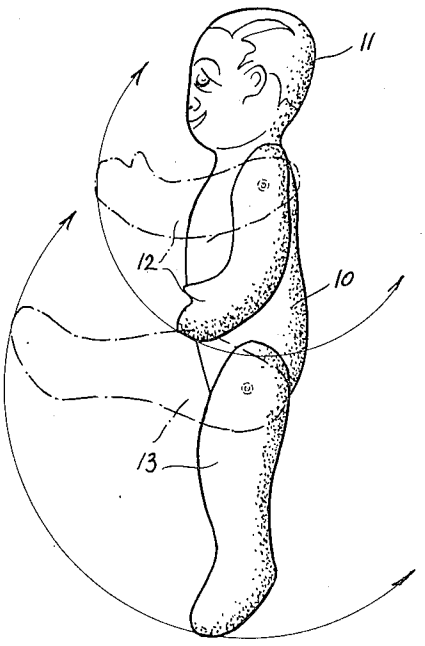


FIG. 2.



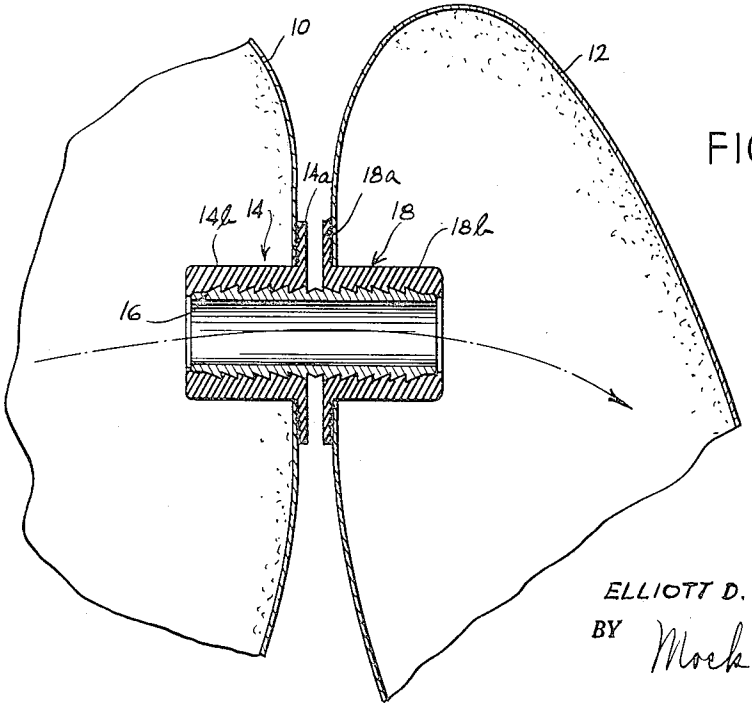


FIG. 3.

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FIG. 6.



FIG. 5.

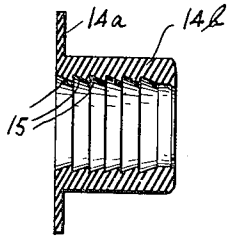


FIG. 4.

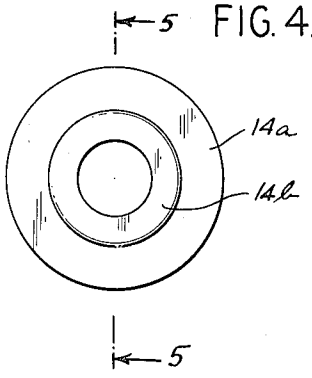


FIG. 9.

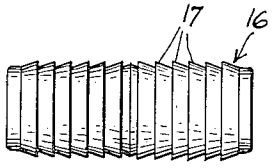


FIG. 8.

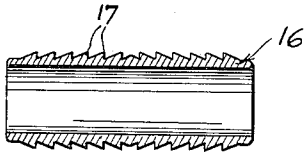
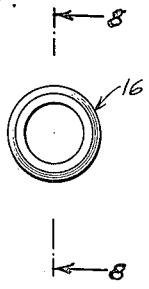


FIG. 7.



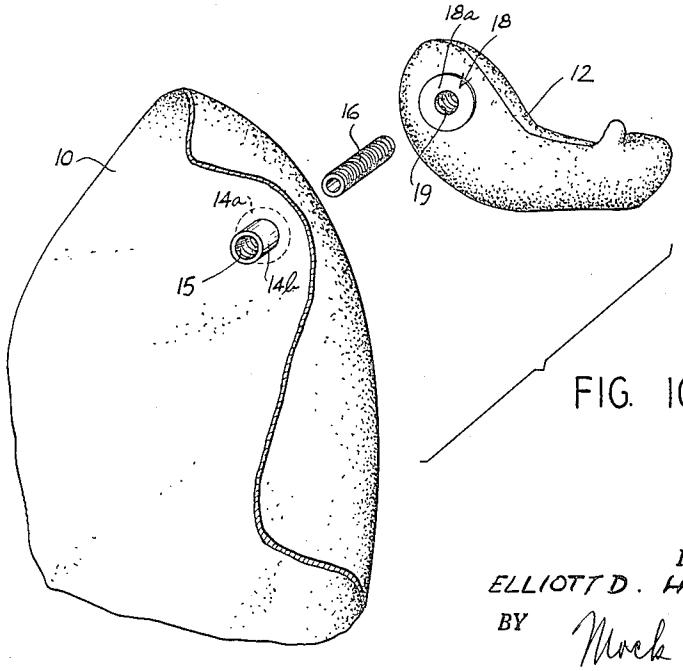


FIG. 10.

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INFLATABLE TOY DEVICE

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Application September 11, 1952, Serial No. 309,116

5 Claims. (Cl. 46—87)

This invention relates to inflatable devices and is concerned more especially with inflatable toy figures, such as dolls and the like, having relatively movable, articulated, inflatable portions.

A primary object of the invention is the provision of an inflatable object such as a toy figure having separate, inter-connectible air chambers simulating body portions of the toy figures or the like, said air chambers being adapted for association by means of a connector element in such a manner as to provide for air-tight connection therebetween and to simultaneously provide for relative movement between the air chambers in realistic simulation of articulation.

Another object of the invention is the provision of an inflatable object of the character indicated which is constructed and designed in such a manner that the component air-chamber body portions comprising the toy figure may be readily inflated in a single operation after assembly of said body portions.

An additional object of the invention is the provision of a connector element which serves not alone to interconnect respective inflatable body portions of the inflatable object but which also serves additionally as an air conduit or passageway for simultaneously inflating and maintaining inflated condition in said respective body portions.

The foregoing objects as well as additional objects and advantages of the invention will be readily apparent in the course of the following detailed description taken in connection with the accompanying drawings which illustrate a preferred embodiment of the invention, and wherein:

Fig. 1 is a front elevational view of an inflatable toy figure embodying the features of the invention;

Fig. 2 is a side elevation of the toy figure;

Fig. 3 is an enlarged fragmentary detail view illustrating the manner of inter-connecting respective air-chamber body portions by means of a connector element and a pair of adapter elements;

Fig. 4 is a front elevational view of one of the adapter elements;

Fig. 5 is a sectional view of the adapter element taken on line 5—5 of Fig. 4;

Fig. 6 is a side elevational view of the adapter element;

Fig. 7 is an end elevational view of the connector element;

Fig. 8 is a longitudinal sectional view of the connector element taken on line 8—8 of Fig. 7;

Fig. 9 is a side elevational view of the connector element; and

Fig. 10 is an exploded perspective view illustrating the manner of assembling a representative pair of inflatable body portions by means of the connector element and a pair of adapter elements associated with the body portions.

The drawings illustrate an inflatable toy figure embodying the features of the invention although it will be understood that the principle of the invention need not

necessarily be limited to incorporation to the particular toy figure illustrated nor even necessarily to a toy figure.

Referring now to the drawings in greater detail, Figs. 1 and 2 illustrate an inflatable toy figure comprising separate, inflatable, inter-connectible body portions such as the main body portion **10** defining an integral head portion **11**, a pair of arm portions **12** and a pair of leg portions **13**.

Said body portions are essentially air chambers formed from any suitable material such as synthetic plastic, natural rubber, synthetic rubber or the like and shaped in such a manner as to simulate body portions of any desired figure such as a doll, animal or the like.

The design construction of the present invention permits separate fabrication of the various body portions of the inflatable object which may be then easily and rapidly assembled together by reason of the novel construction and inter-relation of connector and adapter elements now to be described.

By way of example the assembly of one of the arm portions **12** to the main body portion **10** is illustrated in the drawing and will serve as a typical illustration of the application of the principle of the invention, with particular reference to Figs. 3 and 10. Inflatable body portion **10** is provided at some suitably disposed point with an adapter element **14** having an attachment flange **14***a* and a sleeve portion **14***b*. Sleeve portion **14***b* is provided with a plurality of internal grooves **15** in order to assure air-tight connection with the connector element **16**. Connector element **16** is preferably formed as a hollow sleeve member having on its outer surface a plurality of serrated grooves **17** engageable against the complementary grooves **15** of adapter element **14** so as simultaneously to permit relative movement between body portion **10** and arm portion **12** and to provide an air-tight connection therebetween.

Arm portion **12** is provided with an adapter element **18** having an attachment flange **18***a* and a sleeve portion **18***b*. Sleeve portion **18***b* is provided with a plurality of internal grooves **19** similar to the internal grooves **15** of adapter element **14**. In assembling the arm portion **12** to the body portion **10**, connector element **16** is pressed into the sleeve portion **14***b* of adapter element **14**, which has been previously affixed to body portion **10** by adhesive means, heat sealing or in any other suitable manner. Arm portion **12** is then associated with body portion **10** by pressing the sleeve portion **18***b* of adapter element **18** of said arm portion onto the half portion of connector element **16** protruding from adapter element **14**. By reason of the described arrangement air-tight connection is assured between the body portion **10** and arm portion **12** while at the same time relative movement is permitted between said arm and body portions in realistic simulation of joint articulation.

Figs. 1 and 2 illustrate front and side elevations respectively of an inflated toy figure incorporating the principle of the present invention. It will be understood that a connector element **16** is employed at each simulated point of articulation of a limb portion, such as the pair of arm portions **12** and the pair of leg portions **13**, with the main body portion **10**. It will be further understood that the toy figure or other inflatable device may be inflated by means of the inflating tube (see arrow Fig. 1) carried by body portion **10**. The simulated articulation or relative movability of arm portions **12** and leg portions **13** is indicated by arcuate arrows in Fig. 2.

In order to assure positive air-tight connection and to permit simultaneously relative movement between respective body portions of the inflatable device, it is preferred to form connector element **16** with its serrated external grooves **17** symmetrically arranged with respect

to the central diametral plane of said connector element so that the apices of the grooves on each half portion thereof face in opposite directions, as best seen in Figs. 8 and 9. Furthermore the internal grooves **15** and **19** of adapter elements **14** and **18** respectively are arranged for complementary inter-engagement, as is best illustrated in Fig. 3. Of course, it will be understood that the particular complementary inter-engagement feature of the adapter elements **14** and **18** and connector element **16** may be varied as desired without departing from the scope of the invention.

Since certain additional modifications may be made in the inflatable device of the present invention without departing from the scope thereof, it is intended that all matter contained in the foregoing specification and shown in the accompanying drawing be interpreted merely as illustrative and not in a limiting sense. The invention may be applied to any desired limb or limbs of the inflatable toy figure.

What is claimed is:

1. An inflatable toy device comprising a main body portion and a plurality of separate, inflatable limb portions relatively movable with respect to said main body portion, each of said limb portions being associated with said body portion by means of a hollow connector element permitting automatic inflation and simultaneous relative movement between said limb and body portion upon inflation of said body portion, and adapter elements secured to said body portion and to each of said limb portions for air-tight and movable association with said connector element, said connector element having a series of unconnected grooves perpendicular to the axis of the connector and said adapter elements having preformed complementary grooves for permitting a readily rotatable fit between the adapters and connector.

2. An inflatable toy device comprising a main body portion and a plurality of separate, inflatable limb portions relatively movable with respect to said main body portion, each of said limb portions being associated with said body portion by means of a hollow connector element permitting automatic inflation and simultaneous relative movement between said limb and body portion upon inflation of said body portion, and adapter elements secured to said body portion and to each of said limb portions for air-tight and movable association with said connector element, said connector element and said adapter elements having preformed complementary grooves for permitting a readily rotatable fit between the adapters and connector.

3. An inflatable toy device comprising a main body portion and a plurality of separate, inflatable limb portions relatively movable with respect to said main body portion, each of said limb portions being associated with said body portion by means of a hollow connector element permitting automatic inflation and simultaneous relative movement between said limb and body portion upon inflation of said body portion, and adapter elements secured to said body portion and to each of said limb portions for air-tight and movable association with said connector element, said connector element having a plurality of unconnected external grooves and said adapter elements having a plurality of preformed complementary unconnected integral grooves interfitting in air-tight and relatively movable engagement with said connector grooves.

4. An inflatable toy device in accordance with claim 3, wherein the external grooves of said connector element are arranged symmetrically with respect to the central diametral plane thereof to define groove apices facing in opposite directions on opposite half portions thereof.

5. An inflatable toy device comprising a main body portion and a plurality of separate, inflatable limb portions relatively movable with respect to said main body portion, each of said limb portions being associated with said body portion by means of hollow adapter elements and a hollow connector element, one of said adapter elements being secured to the main body portion and projecting into the interior thereof and a similar adapter element secured to a limb portion and also projecting into the interior thereof, said connector element having one end fitted in one adapter and the other end in the other adapter, said connector element having unconnected grooves and said adapters having preformed complementary grooves whereby insertion of the connector into the adapters will turnably secure said body portion and limb portion together.

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