A child's doll is provided with an internal reservoir into which a liquid may be introduced through the mouth orifice of the doll. The reservoir is also provided with a discharge valve whose opening is effected by the close proximity of a permanent magnet; such a magnet being provided attached to a training seat with chamber-pot. The doll is provided with an orifice at its lower extremity through which it can eliminate fluid when placed on the training seat.

3 Claims, 5 Drawing Figures
LIQUID ELIMINATING DOLL WITH VALVE MEANS ACTUATED BY EXTERNAL MAGNETIC DEVICE

BACKGROUND OF THE INVENTION

The present invention relates to anthropomorphic dolls mimicking the appearance of small children. More particularly, the invention relates to such dolls capable of simulating the functions of liquid ingestion and elimination and designed to serve as models for the process generally known as toilet training.

In the art of constructing dolls for the defecation of small children it has been known to provide for the possibility of ingesting fluids, as from a nursing bottle, and also of permitting the fluids thus ingested to escape from an orifice located in the lower torso of the doll. Generally, however, no control was exercised on the duration of liquid retention by the doll and the behavior of a trained child could not be reproduced.

It is, accordingly, a primary purpose of the instant invention to teach the construction of a doll, and of an associated training seat with integral chamber-pot, which is capable of receiving liquids into a reservoir located internally to the doll through an orifice within its mouth, upon placement of the doll into the training seat the retained liquid draining into the chamber-pot.

Another objection of the invention is to provide a doll construction of relatively simple structure, which obviates the need for complex mechanisms and other lever type of arrangements commonly associated with prior art dolls which are more prone to accidental discharges because of the nature of their structural arrangements which have not been very effective in precluding unintentional discharges of the liquid stored in the dolls reservoir.

It is a further objection of the invention to teach the construction of automatic valves operated by permanent magnets in, or near, the training seat, suitable for use on the doll of the invention.

It is yet another objective of the invention to describe such details of construction and application as may make the doll and seat of the instant invention into a readily marketable combination, low in cost and of great reliability.

SUMMARY

The objectives of the invention are attained by the provision of a hollow torso in a doll of otherwise arbitrary construction, the insertion into that hollow torso of a reservoir connected by means of flexible tubing to the mouth orifice, and incorporating a valve actuated by a permanent magnet on the outside of the torso and permitting the fluid in the aforementioned reservoir to drain through an orifice in the lower section of the torso.

Conjointly with the described above a training seat of suitable proportions, and incorporating a chamber-pot, is also provided; with a permanent magnet either rigidly or flexibly attached to the seat in such a manner that upon the placement of the doll, in a seated position, onto the chamber-pot the valve is brought within actuating distance of the magnet. With the valve open, the entrained liquid flows out of the reservoir in the doll's body and into the chamber-pot.

The details of the preferred embodiment of the invention are described below with reference to the accompanying illustrations.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWING:

FIG. 1 is a perspective view of a doll seated on a training seat;
FIG. 2 is a sectional view of the doll and training seat combination of the invention, taken along line 2--2 of FIG. 1;
FIG. 3 is a sectional view through another embodiment of the invention incorporating a magnet flexibly attached to the training seat;
FIG. 4 is a partial sectional view through a doll torso incorporating a lever-mounted sealing element in its valve; and
FIG. 5 is a fragmentary plan view of the belt incorporating the magnet of the embodiment shown in FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A preferred embodiment of the invention is illustrated in FIGS. 1 and 2. FIG. 1 shows a doll 100 and a training seat 200 in perspective, with the location of a reservoir 110 and the location of a chamber-pot 210 indicated. The doll 100 and the seat 200 are separate assemblies and in the normal course of play would be kept separated; the automatic valve of the invention being actuated upon the placement of the doll 100 on the seat 200, as shown.

FIG. 2 shows the same doll 100 seated upon the training seat 200 in a section taken along line 2--2 of FIG. 1. The doll 100 consists of a torso 101 and a head 102 adjoined thereto, and is provided with arms, legs and features to present a personable appearance; a mouth 103a is provided on the head 102 of the doll and surrounds an orifice 103 which leads into a flexible conduit 104 terminating in an enclosed volume 108 defined by reservoir shell 110 and lid 106. A shorter section 105 of similar conduit is also provided, intruding into the space 108 through the lid 106 and terminating externally to the doll torso 101. Both conduits are arranged with their termini reaching the mid-point of the volume 108 approximately. All of the above enumerated components are suitably made of plastic materials readily molded into the required shapes and impervious to the passage of liquids. A valve assembly is provided in the lower part of the reservoir 110, controlling the flow of fluid between the volume 108 inside the reservoir 110 and the volume internal to the torso 101 but external to the reservoir. This valve includes a stem 122 upon which are mounted a retainer 123, a return-spring 124, and valve-cone 125 and an actuating mass 121, in that order. The stem 122 protrudes through an orifice 120, provided with a chamfered face for the receipt of valve-cone 125, and is so arranged that in the absence of actuating forces on the mass 121, the return-spring 124, pressing on the retainer 123, forces the valve-cone 125 into intimate contact with the edge of the orifice 120. The actuating mass 121 is made from a material of high magnetic permeability and is moveable by the attractive forces exerted upon it by a permanent magnet 221 rigidly fixed in frame 201 of the seat 200.

In normal usage the doll is held and pampered by a child and may be fed with a liquid, suitably water, from a bottle or nurser through the orifice 103, the liquid thus ingested entering the space 108 through conduit 104 and displacing some of the entrapped air from the reservoir through conduit 105, which serves as a vent.
Escape of the entrained liquid mass 109 from the reservoir 110 is effectively prevented by the closed valve 120/125, by the tightly fitting lid 106 — the latter also serving to locate the reservoir assembly rigidly in torso 101 through integral flange 107 — and by the arrangement of the conduits 104 and 105 which permit the doll to be tilted and manipulated without the discharge of any significant amount of liquid from the space 108.

When such discharge is desired, to simulate the eliminatory processes of the human body, the doll is placed on the seat 200 with the lower end of the torso 101 above the chamber-pot 210; this brings the permanent magnet 221, embedded in the frame of the seat 200, into close proximity of the actuating mass 121 within the torso of the doll 100 and causes the latter to move in the direction of the magnet 221, thus removing the valve-cone 125 from contact with the orifice 120. The liquid mass 109 then flows, by gravity into the internal volume of the torso 101 and is permitted to escape therefrom via an orifice 111 perforating the lower extremity of same.

Should the doll be removed from its position on the seat 200, the attraction of the magnet 221 upon the mass 121 ceases instantly and the valve recloses under the influence of spring 124, thereby interrupting the discharge of liquid from the reservoir. To the child playing with the doll, to whom the mechanisms recited above are invisible and unknown, it thus appears that the doll is 'toilet-trained' and will not eliminate unless seated upon the 'potty'; providing both instruction and a sense of power. The child feeds the doll and then, at its own chosen time, may cause it to eliminate the liquid fed to it.

An alternate arrangement of the valve mechanism is illustrated in the partial section of FIG. 4. A permanent magnet 231, embedded in seat-frame 201, cooperates with a mass 131, susceptible to magnetic influence, to cause valve-cone 135 to move out of engagement with orifice 130. The normally closed relationship between elements 130 and 135 is maintained by a spring 134 acting on a lever 132, to which the valve-cone 135 is attached at one end. The lever 132 is pivoted near its midpoint on pivot 139 and contacts spring 134 at its extremity furthest from orifice 130. The pivot 139 also serves as the retainer for the spring 134.

Another embodiment of the invention, shown in FIG. 3, utilizes a magnet 241, attached to belt 240, as the primary element of its actuating mechanism. The magnet 241 acts on a mass 141 attached to one end of a curved lever 142, pivoted at 149, carrying valve-cone 145 at the other end. The valve-cone 145 normally blocks an orifice 140 penetrating through reservoir shell 110 under the influence of a spring 144 acting on retainer 143. Retainer 143 is pivotally attached to lever 142 at 148, to prevent the transmission of side forces which might bind the valve-cone 145 in orifice 140.

In this embodiment the discharge of liquid mass 109 from reservoir 110 is initiated, after the doll 100 is seated on the seat 200, by girding the doll-tORSO 101 with belt 240 and securing the belt by buckle 242, as illustrated in FIG. 5, thereby placing magnet 241 in close proximity to the mass 141.

The above embodiments illustrate the general principles of the invention and persons skilled in the art may, upon exposure to the teachings of the disclosure, provide alternative mechanism in detail without departing from the invention as defined in the claims. For example, the reservoir may be arranged to be pressurized in lieu of atmospheric pressure forcing the liquid out of the reservoir.

What is claimed is:
1. A doll comprising a hollow torso, a head with mouth opening and a torso opening, a reservoir in said torso, means adapted to carry liquid from said mouth opening to said reservoir in said hollow torso and for equalizing pressure in said reservoir with atmosphere; means enabling the release of liquid from said reservoir comprising an orifice in the wall of said reservoir and valve means mounted at said orifice to open and close said orifice to control the liquid flow therethrough to remain in a normally closed position; means for opening said valve including a lever having first and second ends, and being pivoted for displacing said first end thereof which is in mutual cooperation with said valve means, means for creating magnetic attraction supported at said second end of said lever, and means disposed externally of said doll adapted to exert a magnetic force on said attraction means attached to said lever so as to pivot said lever and thereby enable the first end of said lever to act on said valve means and overcome said biasing means, whereby said liquid is released from said reservoir to said torso opening.
2. The doll according to claim 1, including in combination a training seat provided with a frame, a seat including a chamber pot, and said externally disposed means being attached to said frame of said training seat.
3. The doll according to claim 1, including in combination a training seat provided with a frame and having a belt for enfriddling the torso of said doll, a seat including a chamber-pot and said externally disposed means forming a part of said belt.