Jan. 22, 1957 R. K. OSTRANDER 2,778,155

DOLL WITH MECHANISM FOR MOVABLE LIPS

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Fig. 1

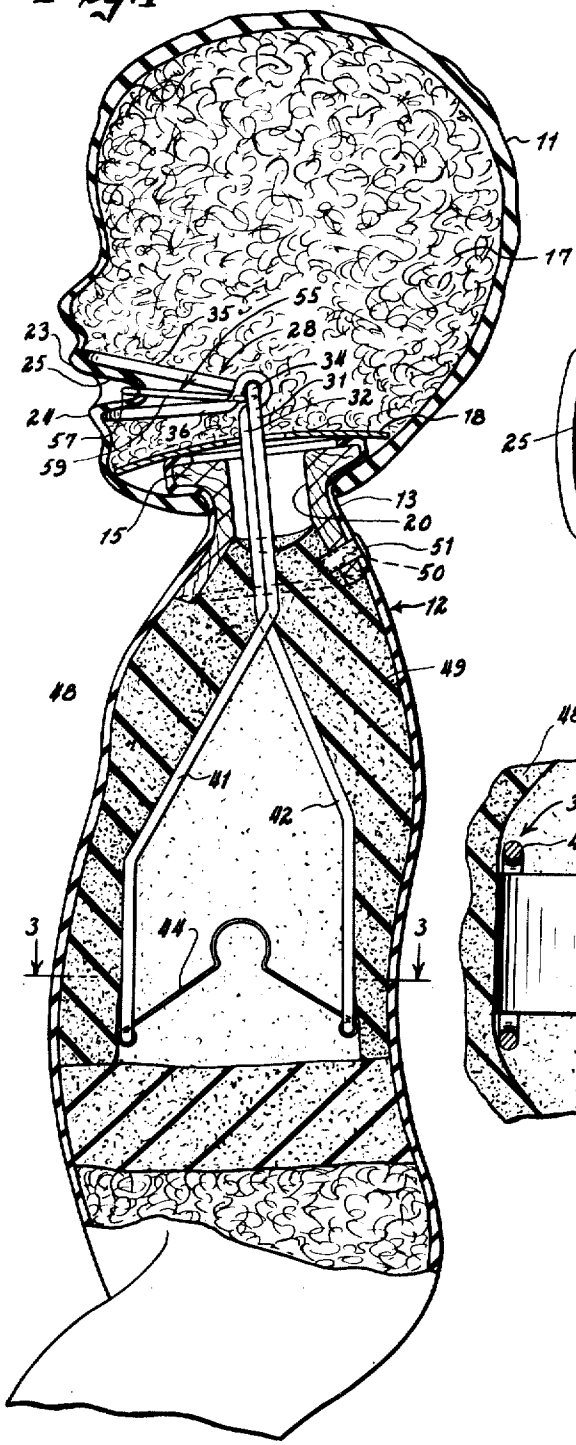


Fig. 2

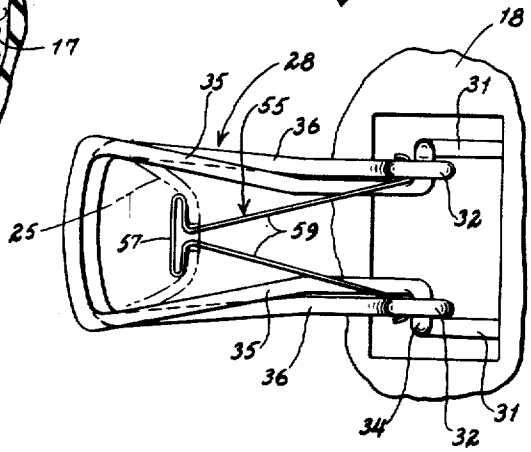
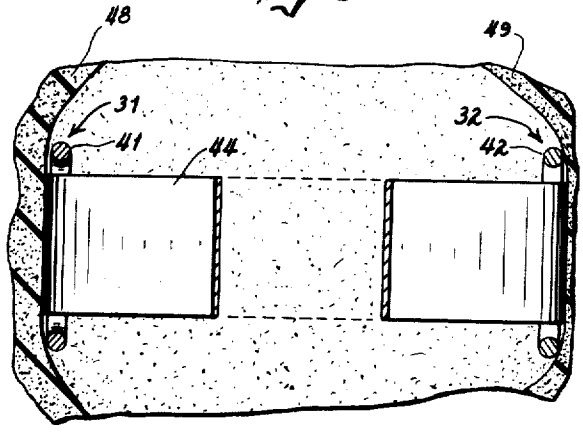


Fig. 3



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Fig. 4

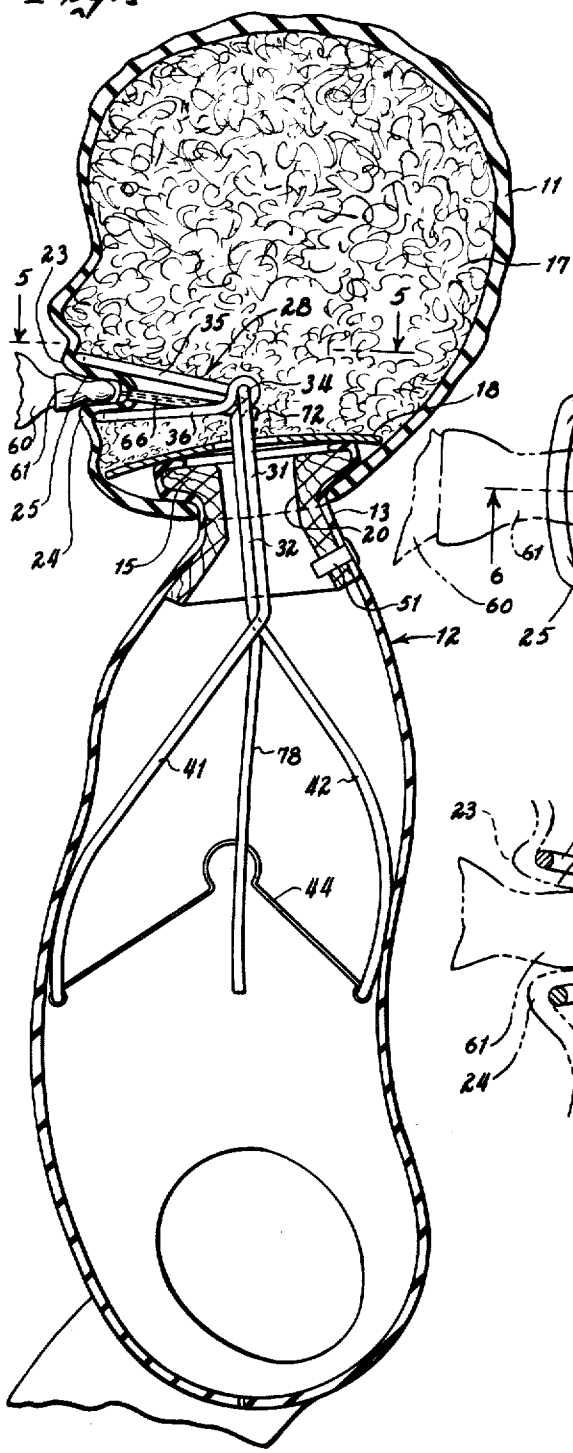


Fig. 5

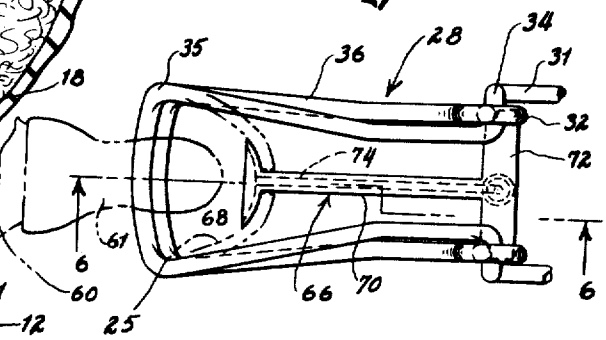
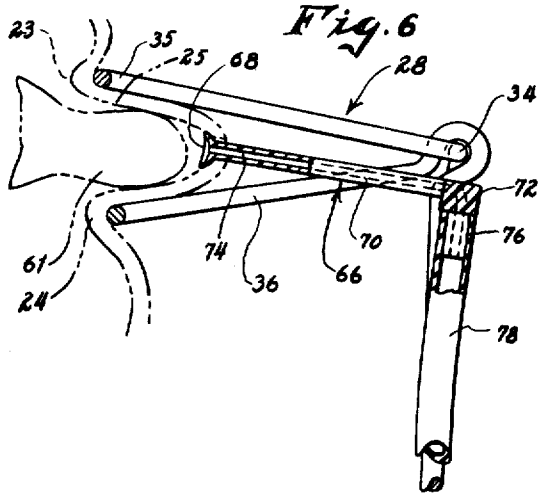


Fig. 6



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DOLL WITH MECHANISM FOR MOVABLE LIPS

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9 Claims. (Cl. 46—141)

This invention relates to dolls and more especially to dolls having provision for moving the lips when the body of the doll is squeezed.

It is an object of the invention to provide a doll with improved means for moving the lips to change the expression of the doll, and to change the expression more attractively by having lip movement which is natural. Another object is to provide a doll with moving lips and a lip actuator which is simple in construction and assembled with the doll with a minimum of labor. These features reduce the cost of the doll construction and make the provision of moving lips practical on dolls of moderate price.

Another object of the invention is to provide a doll having a mouth which is formed by a socket extending inwardly from the lips of the doll, the socket providing a roof, back and bottom for the mouth which is realistic in appearance when the doll's lips are separated to open the mouth. The head of the doll is constructed of flexible plastic material which permits the lips to move from an open position to a closed position, and the doll head is molded so that the lips have a bias toward one of these positions, preferably toward the open position.

Another object is to provide a doll with a lip actuator constructed of two levers pivoted together at a location behind the mouth of the doll, with upper portions that contact with the inside of the head behind the upper and lower lips, and with lower portions of the levers extending downwardly from the pivot connection through the neck and into the body of the doll and diverging into positions adjacent to the front and back of the doll body so that squeezing of the body moves the levers together and operates the upper portions of the levers to move the lips of the doll.

Still another object is to provide an improved nursing doll having a mouth for receiving the nipple of a bottle, and having a lip actuator which moves the lips in such a fashion as to withdraw liquid through the nipple into the mouth of the doll. One feature of the nursing doll relates to the provision of a passage for draining liquid from the mouth into the doll body, with the passage located in the connector by which the lip actuator is secured in position in the head of the doll.

Other objects, features and advantages of the invention will appear or be pointed out as the description proceeds.

In the drawing, forming a part hereof, in which like reference characters indicate corresponding parts in all the views:

Figure 1 is a vertical sectional view through a stuffed doll made in accordance with this invention;

Figure 2 is a greatly enlarged top plan view of the lip actuator shown in Figure 1;

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

Figure 4 is a sectional view, similar to Figure 1, but showing a modified form of the invention;

Figure 5 is an enlarged sectional view taken on the line 5—5 of Figure 4; and

Figure 6 is a sectional view taken on the line 6—6 of Figure 5.

The doll shown in Figure 1 includes a head 11 and a body 12 connected at a neck 13. The parts are made of flexible plastic material, preferably vinyl chloride. There is a neck block, preferably made of plastic, at the upper end of the body 12, and the head is snapped over the neck block in accordance with conventional doll construction.

The upper portion of the head 11 is preferably filled with stuffing 17 and there is a flexible washer 18 inserted into the head for holding the stuffing 17 in place. This washer 18 provides a partition for preventing the stuffing 17 from moving down into an opening 20 in the neck block 15. This keeps the stuffing 17 from entering the body of the doll.

The head 11 is made with an upper lip 23 and a lower lip 24. The head is molded with a mouth socket 25 which projects rearwardly from the lips 23 and 24, and this socket 25 provides a roof, back and bottom for the mouth which make the appearance of the doll more realistic when the mouth is open, as previously explained.

The plastic material of which the doll is made is resilient so that the lips 23 and 24 can be moved from an open mouth position to a closed mouth position, but the resilience of the plastic gives the lips a bias toward one or the other of these positions, depending upon the original molding of the head. Manufacture is facilitated by having the head molded with the lips 23 and 24 spaced from one another and the mouth open.

There is a lip actuator 28 within the doll and this actuator includes a first lever 31 and a second lever 32 joined to one another by a pivot connection 34. The pivot connection is located in the head of the doll and behind the mouth socket 25. The first lever 31 has an upper portion 35 extending across the top of the mouth socket 25 and into contact with the inside surface of the head 11 behind the upper lip 23. The second lever 32 has an upper portion 36 extending under the mouth socket 25 and into contact with the inside surface of the doll head behind the lower lip 24.

The levers 31 and 32 extend downwardly through an opening in the washer partition 18, through the neck block 13, and into the doll body 12. The lower portions of the levers 31 and 32, designated by the reference characters 41 and 42, respectively, diverge from one another in the body 12, the lower portion 41 extending toward the front of the doll and the lower portion 42 extending toward the back of the doll. Pressure applied to the doll to squeeze the front and back of the body toward one another moves the lever portions 41 and 42 toward one another, but these lever portions have a bias toward their diverging positions. In the construction shown, this bias is provided by a flat spring 44 having its opposite ends shaped to connect with the lower ends of the lever portions 41 and 42.

In order to stiffen the body 12, there is resilient material within the body in contact with the inside surfaces of the molding of which the body is made. This resilient material is preferably in the form of unitary sections 48 and 49, constructed of polyvinyl chloride foam, or other compressible material, compatible with the vinyl chloride body material, located between the lever portions 41 and 42 and the front and back walls, respectively, of the doll body. A voice 50, consisting of a pneumatic sound maker, is located in a sleeve 51 extending through the body 12 and into the neck block 15. The sleeve 51 is preferably held by friction in the neck block and passage of air through the sleeve 51, when the body of the doll

compresses or expands, provides the air flow to operate the voice **50**.

The lip actuator **28** is held in position by a connector **55** which has a front element **57** located inside of the mouth socket **25** and extending across the surface at the back of the mouth socket in a transverse direction. This connector **55** has a stem portion **59** projecting through an opening in the back of the mouth socket and the end of the stem portion diverges and hooks over the lever **32** in the region of the pivot connection **34**. The stem portion of the connector is preferably short enough so that the mouth socket is pulled back under some tension when the connector is hooked on the lever **32**.

The levers **31** and **32**, as well as the connector **55**, are preferably made of wire. The connector **55** is of much smaller wire than the lip actuator, and the front element **57** ordinarily does not show when the mouth is open because it imbeds itself in the plastic material and is painted red to match the interior of the mouth socket.

From the construction described, it will be apparent that squeezing of the body **12** to move the lever portions **41** and **42** toward one another operates the upper lever portions **35** and **36** to move the lips **23** and **24** together. Sufficient displacement of the lever portions **41** and **42** moves the lips far enough to close the mouth.

Figure 4 shows a modified construction in which the parts corresponding to Figure 1 are indicated by the same reference characters. A nursing bottle **60** is provided with a nipple **61** small enough to fit the mouth socket **25** of the doll. Squeezing of the doll to close the lips repeatedly on the nipple **61** causes the liquid to flow from the bottle **60** into the mouth socket of the doll with a realistic nursing action.

A passage is provided in the back of the mouth socket **25** for draining liquid from the mouth socket into the body of the doll. In the construction illustrated, the lip actuator **28** is secured in place by a connector **66** through which the drain passage passes. This connector has a forward end portion **68** which is located in the mouth socket **25** and against the back of the mouth socket. The connector **66** has a stem **70** extending through an opening in the back of the mouth socket to a tie element **72** which joins the connector **66** to the lip actuator in a manner similar to that already illustrated in Figures 1 and 2. A passage **74** opens through the face of the front portion **68** of the connector and leads through the stem **70** to an outlet spout **76** (Figure 6) to which a tube **78** is connected. This tube **78** extends downwardly through the neck of the doll and into the doll body for draining the liquid from the mouth.

The nursing doll can be made with the wire connector **55**, as shown in Figures 1 and 2, and the drain for liquid can include a plastic drain plug, such as the forward portion **68** of Figures 4 and 5, the drain plug being located in the rear bottom part of the mouth socket and having a flexible tube connected to the rearward end of the plug and leading down through the neck block into the body.

With dolls that drink liquid, as shown in Figure 4, the body **12** is made without any stuffing or other filling, and the diverging portions **41** and **42** extend into direct contact with the inside surfaces of the plastic material of which the doll body is made.

If the nursing doll is made with stuffing, such as shown in Figure 1, the drain tube is made to lead to an outlet in the base of the body so that liquid can pass through the doll without wetting the stuffing.

The preferred embodiments of the invention have been illustrated and described, but changes and modifications can be made and some features can be used in different combinations without departing from the invention as defined in the claims.

What is claimed is:

1. A doll having a head and a body with a neck connecting them, the head and body being made of flexible plastic material and the head having a socket therein representing the mouth of the doll, the socket being of substantial depth and forming a roof, back and bottom for the mouth, at least a portion of the body being hollow from the neck down, and at least a portion of the head being hollow from the neck up to a location behind the mouth socket, lips at the front of the mouth socket movable between an open and a closed position, the lips having a bias toward one position which constitutes the normal position of the mouth, a lip actuator in the doll comprising a first lever having an upper portion above the mouth socket with its end against the inside of the upper lip, a second lever having an upper portion below the mouth socket with its end against the inside of the lower lip, a pivot connection joining the levers together at a location behind the mouth socket, each of the levers having a lower portion extending downwardly through the neck and into the body of the doll, the lower portions of the levers diverging toward the front and back of the body, and the lower portions being biased away from one another and connected with the upper portions of the levers in such relation that movement of the lower portions toward one another moves the upper portions of the levers in directions to move the lips away from their normal positions, and means holding the actuator in position with the ends of the levers against the inside surfaces of the lips.

2. The doll described in claim 1 and in which the mouth is normally open and the lower portion of the first lever extends toward the front of the doll and the lower portion of the second lever extends toward the back of the doll so that pressure on the doll body urging the levers toward one another causes the lips to move together to close the mouth.

3. The doll described in claim 1 and in which the means for holding the actuator in position constitutes a connector with a portion located in the mouth socket and extending transversely across the back of the mouth socket and then through an opening in the back of the socket to a region near the pivot connection between the levers of the lip actuator, and in which the connector is secured to the lip actuator in the region of said pivot connection.

4. The doll described in claim 1 and in which the means for holding the actuator in position constitutes a connector having a forward portion located within the mouth socket and extending across a portion of the back of the mouth socket, the connector having another portion which extends through an opening in the back of the mouth socket to a connection with the lip actuator, and the connector having a passage therein communicating with the interior of the mouth socket and extending to an outlet behind the mouth socket for draining liquid from the mouth socket into the body of the doll.

5. The doll described in claim 1 and in which the actuator is held in position by a connector which has a portion located in the mouth socket and extending across a part of the inside surface at the back of the mouth socket, a rearwardly extending stem of the connector projecting through an opening in the back of the mouth socket, means connecting the stem with the lip actuator in the region of the pivot connection between levers of the lip actuator, the stem having a passage therethrough communicating with the mouth socket, and a tube connecting with the stem in communication with the passage at a location behind the mouth socket, said tube extending downwardly through the neck of the doll for draining liquid from the mouth into the lower part of the body of the doll.

6. A doll having a head and body of flexible plastic material, the head and body being joined at a neck of the doll and the head having a mouth formed by lips which have a bias toward open position and a socket with surfaces consisting of a roof, back and bottom of the mouth, the head behind the mouth socket and downwardly to the neck being hollow and the body having a hollow portion extending from the neck downwardly for

at least a part of the length of the body, a lip actuator comprising a first lever having an upper portion with an end against the inside surface of the head behind the upper lip, a second lever having an upper portion with an end against the inside surface of the head behind the lower lip, a pivot connection between the levers behind the mouth socket, each of the levers having a lower portion extending downwardly through the neck and into the hollow part of the body, the lower portions of the levers diverging within the body, the first lever toward the front of the doll and the second lever toward the back of the doll, means imparting a bias to the actuator to hold the lower portions of the levers away from one another, and means holding the upper portions of the actuator in contact with the inside surface of the head behind the lips.

7. The doll described in claim 6 and in which the upper part of the head is stuffed and the upper portions of the lip actuator levers are located in the stuffing, and a partition in the head of the doll blocking the stuffing from access to the neck, the partition having an opening therein through which the levers of the lip actuator extend downwardly into the neck.

8. The doll described in claim 6 and in which part of the body of the doll is filled with resilient material,

the resilient material being disposed in sections, one of which is located between the first lever and the front of the doll body, and another of which is located between the second lever and the back of the doll body, and a spring located between the levers and providing the bias for holding the lower portions of the levers away from one another.

9. The doll described in claim 6 and in which there is a passage opening through the back of the mouth socket and there is a tube having its upper end connected with the passage and its lower end in position to drain liquid from the mouth socket into the body of the doll.

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