

Oct. 22, 1968

J. W. RYAN ET AL

3,406,482

FACIAL ANIMATING MEANS FOR A FIGURE TOY

Filed Dec. 6, 1966

Fig. 1

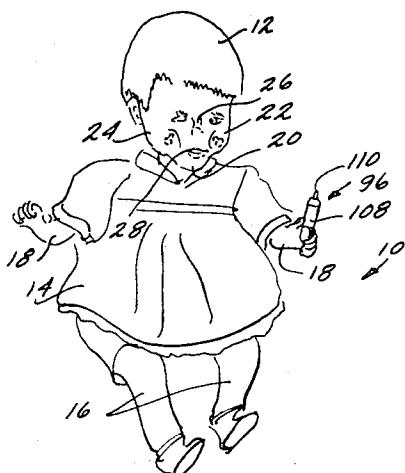


Fig. 2

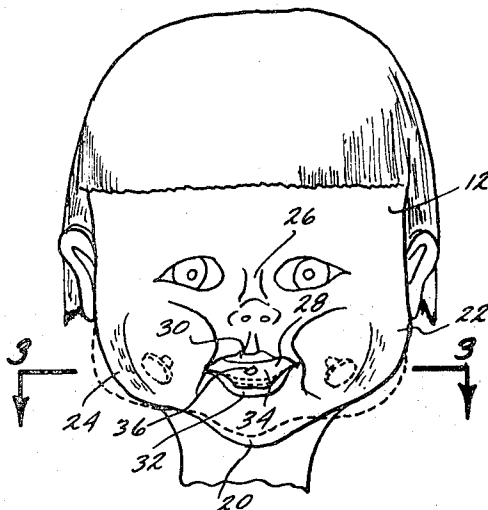


Fig. 3

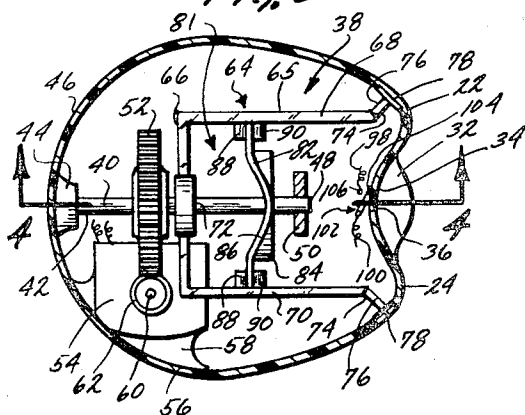


Fig. 4

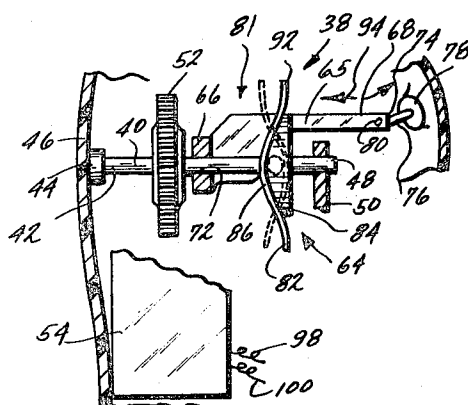
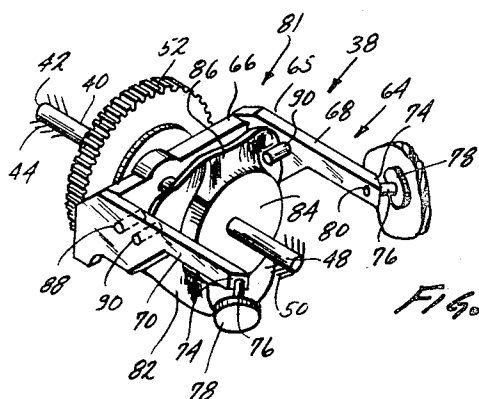


Fig. 5



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FACIAL ANIMATING MEANS FOR A FIGURE TOY
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Filed Dec. 6, 1966, Ser. No. 599,570
4 Claims. (Cl. 46—247)

ABSTRACT OF THE DISCLOSURE

Reciprocal arms are connected to the flexible cheeks of a doll to flex them in simulation of a nursing action. The arms are carried by the bight portion of a U-shaped member slidably mounted on a rotatable shaft which carries a cam operatively associated with said arms for reciprocating them when the shaft is rotated by an electric motor.

BACKGROUND OF THE INVENTION

Field of the invention

The present invention relates to facial animating means for a figure toy and more particularly to means for animating the cheeks and mouth of a doll to simulate nursing actions.

Description of the prior art

Although a number of prior art nursing dolls are available, they do have certain disadvantages.

One disadvantage resides in the fact that the mechanism for simulating nursing is complicated and comparatively expensive.

Another disadvantage resides in the fact that the nursing mechanisms do not impart realistic facial changes to the doll during simulated nursing activities.

Yet another disadvantage resides in the fact that the mechanism for simulating nursing is sometimes difficult to operate by a child user of the doll.

Summary of the invention

In view of the foregoing factors and conditions characteristic of nursing dolls, it is a primary object of the present invention to provide a new and useful facial animating means not subject to the disadvantages enumerated above and having structurally-durable, cheek-actuating means especially designed for simulating nursing activities in a doll efficiently, safely and expeditiously.

Another object of the present invention is to provide new and useful drive means for driving the cheeks of a doll on a predetermined cycle causing the cheeks to transmit flexing movements to the doll's lips, whereby the facial movements of the doll simulate nursing activities.

Another object of the present invention is to provide, in combination with a figure toy including a flexible face portion defining cheek means and mouth means having upper and lower lip means, animating means comprising cheek engaging means engageable with the cheek means and drive means connected to the cheek engaging means for moving the cheek engaging means on a predetermined cycle, whereby the cheek means will transmit flexing movements to said lips.

According to the present invention, a figure toy, in the form of a doll, is provided with a flexible face of which a portion includes a pair of cheeks and a mouth having upper and lower lips joined together by an inwardly extending bulb. The cheeks are animated in such a manner that the cheeks and the lips are moved in simulated, baby nursing fashion. A cheek engaging means is connected to each cheek and a drive means is connected to the engaging means for moving the cheeks on a predetermined cycle causing the cheeks to transmit flexing movements to the lips.

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The drive means includes a shaft rotatably mounted in the doll head. A U-shaped drive member has its bight portion reciprocally mounted on the shaft and its arms extending into engagement with the cheek engaging means so that, upon reciprocation of the bight portion upon the shaft, the cheeks will be moved on the predetermined cycle. A drive gear is affixed to the shaft for rotating it through the medium of a worm gear provided on an electric motor, which may also be mounted in the doll head. A cam is fixed on the shaft for rotation therewith between the arms of the U-shaped member in operative association with the arms. The cam is so shaped, and coacts with these arms in such a manner that, rotation thereof reciprocates the U-shaped member on the shaft.

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. The present invention, both as to its organization and manner of operation, together with further objects and advantages thereof, may best be understood by reference to the following description, taken in connection with the accompanying drawings in which like reference characters refer to like elements in the several views.

Brief description of the drawings

FIGURE 1 is a front elevational view of a figure toy of the present invention;

FIGURE 2 is an enlarged, front elevational view of the head portion of the figure toy shown in FIG. 1;

FIGURE 3 is a cross-sectional view taken along line 3—3 of FIG. 2;

FIGURE 4 is an enlarged, partial cross-sectional view taken along line 4—4 of FIG. 3; and

FIGURE 5 is a perspective view showing somewhat schematically an animating means of the present invention in combination with the figure toy of FIG. 1.

Description of the preferred embodiment

Referring again to the drawings, a figure toy constituting a presently preferred embodiment of the present invention, generally designated 10, is shown for purposes of illustration but not of limitation as comprising a doll having a head 12, a body portion 14, a pair of legs 16, and a pair of arms 18.

The head 12 is preferably molded from a soft, flexible material, such as plastisol, and includes a chin 20, a left cheek 22, a right cheek 24, a nose 26 and a mouth 28.

The mouth 28 includes an upper lip 30 and a lower lip 32 which are joined together by an inwardly extending wall member 34 having a nipple-receiving aperture 36 provided therein.

The cheeks 22, 24, the lips 30, 32 and the wall member 34 are formed continuously so that flexing movements of the cheeks 24, 22 will be transmitted to the lips 30, 32, in a manner to be hereinafter described.

The cheeks 24, 22 are animated on a predetermined cycle by an animating means 38 which is mounted in the head 12. The animating means 38 includes a rotatable shaft 40 having a first end 42 rotatably received in a bearing 44 provided on the rear wall 46 of the head 12 and a front end 48 rotatably received in a bearing block 50 which is supported within the head 12. The shaft 40 is rotated by a drive gear 52 which is affixed thereto and which is driven by an electric motor 54 affixed to the side wall portion 56 of the head 12 by a flange 58. The motor 54 includes an output shaft 60 having a worm gear 62 affixed thereto in driving engagement with the gear 52.

The animating means 38 also includes a drive means 64 comprising a substantially U-shaped member 65 having a bight portion 66 and parallel, spaced-apart arms 68, 70. The bight portion 66 is provided with an aperture 72 for reciprocally mounting the drive means 64 on

the shaft 40 and each arm 68, 70 is provided with an angular end 74 adjacent an associated cheek 24, 22. A connecting means 76 is secured to an associated cheek 24, 22 by a pad 78 and to an associated end 74 by frictionally engaging an aperture 80 provided therein.

The drive means 64 includes a motion transmitting means 81 for reciprocating the U-shaped member 65 on the shaft 40. The motion transmitting means 81 includes a cam means 82 which is affixed to the shaft 40 by a hub member 84 and which has a convoluted portion 86 caged between a pair of pins 88, 90 extending inwardly from associated arms 68, 70. The cam means 82 is so shaped that each rotation thereof by the shaft 40 moves the outer periphery 92 of the convoluted portion 86 from the solid line position to the broken line position shown in FIG. 4, whereby a predetermined amount of lateral displacement takes place, as indicated. This displacement moves the drive means 64 in a reciprocating manner as indicated by arrow 94 in FIG. 4. Thus, the drive means 64 is reciprocated on a predetermined cycle by the cam means 82 moving the cheeks 24, 22 in such a manner that the cheeks simulate nursing action by the doll due to the flexing movements thereof. These flexing movements are transmitted to the lips 30, 32 in such a manner that they are flexed on a simulated nursing cycle.

The doll 10 is provided with a nursing bottle means 96 which may be positioned in the aperture 36 in the mouth 28 to heighten the realism of the simulated nursing action.

The electric motor 54 is provided with electrical leads 98, 100 for connecting it to a suitable source of electrical current, not shown, through a switch 102. The switch 102 has a blade 104 positioned behind the aperture 36 and a contact 106 engageable by the blade 104 for completing a circuit through the leads 98, 100. The nursing bottle means 96 includes a simulated nursing bottle 108 (FIG. 1) having a nipple 110 which may be positioned in the aperture 36 to move the blade 104 into engagement with the contact 106.

The facial animating means herein shown and described is of the type shown and described in copending application Ser. No. 599,568, filed Dec. 6, 1966.

While the particular figure toy herein shown and described in detail is fully capable of attaining the objects and providing the advantages hereinbefore stated, it is to be understood that it is merely illustrative of the presently preferred embodiment of the present invention and that no limitations are intended to the details of construction or design herein shown other than as defined in the appended claims.

What is claimed is:

1. In a figure toy, the combination comprising: a flexible, unsupported forwardly facing face portion defining unitary cheek means and mouth means; rearwardly extending arm means; cheek engaging means; said arm means being connected to said cheek engaging means and being mounted only for reciprocation forwardly and rearwardly; drive means comprising a rotary shaft substantially parallel to said arm means; cam means affixed to said shaft for rotation therewith and being connected to said arm means and so shaped that rotation thereof causes forward and rearward reciprocation of said arm means; and operating means for operating said drive means whereby said cheek means will be flexed and transmit realistic nursing movements to said mouth means.

2. A combination as stated in claim 1 wherein said operating means includes gear means affixed to said shaft means and electric motor means connected to said gear means for rotating said gear means and said shaft means.

3. A combination as stated in claim 2 wherein said mouth means includes an upper lip, a lower lip and wall means connecting said lips together, said wall means having an aperture provided therein, and wherein said operating means also includes an electrical switch mounted in said toy adjacent said aperture, a simulated nursing bottle, said switch being connected to said motor means and being engageable by said bottle when it is inserted in said aperture, for energizing said motor means.

4. A combination as stated in claim 1 wherein said cheek means comprises two cheeks, said connecting means is provided with an aperture for slidably mounting said arm means on said shaft means, said arm means comprises an arm for each cheek and said cheek engaging means includes pin means extending rearwardly and inwardly from each cheek to an associated arm.

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