A head for a doll or figurine, having a mouth including two lips each coupled to an operating rod. A wheel with eccentric studs mounts and drives each rod to impart a reciprocating displacement to the lips, such displacements being staggered, to simulate lip movement as in talking. An electric motor drives the wheel. A circuit breaker may be positioned in the head near an opening at the mouth so that an object inserted therein will turn off the electric motor.

8 Claims, 3 Drawing Figures
HEAD WITH LIPS MOVABLE BY RODS
ECCENTRICALLY MOUNTED TO A WHEEL

The present invention relates to improvements to dolls and similar toy figures, of the type comprising a head provided with a mouth formed of two superimposed lips. It has already been proposed to include in dolls of this type a suitable mechanism to impart an alternating motion to one of the lips so as to simulate speaking, but known constructions are complex and expensive, without realistically reproducing the emission of speech by a child.

The object of the present invention is to overcome the above-mentioned disadvantage and allow production of a simple and robust mechanism which will perfectly simulate both speech and sucking movements.

The doll or toy figure of the invention is characterised by the fact that with each lip is associated an independent operating organ linked to a suitable drive mechanism for imparting to the said organ a reciprocating, axial displacement which causes pulling of the corresponding lip in a direction substantially perpendicular to the vertical plane of the face of the figureine, the movements of the two lips being staggered relative to each other, the better to simulate reality.

In accordance with a preferred embodiment of the invention, each operating organ consists of a rod shaped like a piston-rod, the head of which is engaged on an eccentric stud provided on the lateral surface of a toothed-wheel which controls the two operating organs, the said wheel being rotated continuously. It is advantageous to impart to the upper lip an alternating displacement of lesser amplitude than to the lower lip; this can be easily effected by providing a lesser eccentricity for the corresponding stud of the toothed wheel than for the opposed stud, the two studs being angularly spaced by approximately 90° on the two surfaces of the said wheel.

In order that the invention may be well understood there will now be described an embodiment thereof, given by way of example only, reference being had to the accompanying drawing in which:

FIG. 1 is a partial axial section of the head of a doll in accordance with the invention.

FIG. 2 is a horizontal section of larger scale along the line II — II (FIG. 1), and

FIG. 3 is a schematic view showing the relative positions of the two lateral studs of the toothed drive wheel.

In FIG. 1 reference 1 indicates the head of a doll made of semi-rigid, elastically deformable synthetic material. The base 2 of circular cross-section of head 1 is rotatably engaged in the upper, open portion 3 of the body proper of the doll. Head 1 is so shaped as to reproduce the face of a baby and includes a mouth formed by two superimposed lips 4 and 5, below a nose 6.

In order to move each of the lips 4 and 5 a drive mechanism is employed, as follows: To each of lips 4 and 5 is attached, for example by simple gluing inside an open transversal perforation, the end of an operating rod 7 and 8 respectively, of semi-rigid synthetic material, the opposite end 7a or 8a of which is annular. As shown in FIG. 2, ends or heads 7a and 8a are engaged on two cylindrical studs 9a and 9b provided on the opposed lateral surfaces of a toothed wheel 9. It will be noticed (FIG. 3) that the radii of wheel 9 which pass through the points of greatest eccentricity of these two studs are radically spaced by an angle alpha of approximately 90° and that the radius of eccentricity of stud 9a for control of rod 7 and lower lip 4 is greater than the radius of eccentricity of the opposed stud 9b.

Beyond studs 9a and 9b wheel 9 is rigidly connected to two cylindrical gudgeon pins 9c aligned with the centre of the said wheel so as to form the rotational axis of the latter. These gudgeon pins 9c are engaged in housings provided in a casing formed of two parts 10 of synthetic, moulded material, joined together at 11 and 12. Wheel 9 engages with a worm 13 fixed on the vertical spindle of an electric motor 14 held in the cylindrical base of casing 10 — 10. This base is engaged in the upper portion of a fixing socket 15 provided with two elastically deformable tongues 16 which snap into depressions 10a in the casing. Socket 15, which is axially split, is introduced with a force fit into base 2 of head 1, being angularly immobilised by a stud 2a of the latter, which stud 2a is engaged between the lateral walls of a gap which is provided in the periphery of the socket 15 in such manner that the stud 2a is immobilized.

The operation of the assembly described above will be easily understood. When a voltage is placed across motor 14, toothed wheel 9 is rotated at a relatively low speed by worm 13: because of their eccentricity relative to gudgeon pins 9c, studs 9a and 9b cause axial displacement of rods 7 and 8 which exercise a pulling effect on each of lips 4 and 5, it being noted that a movement of greater amplitude is thus imparted to the lower lip 4. The elasticity of the synthetic material of head 1 causes return of the lips to a rest position when rods 7 and 8 move towards the mouth of the figureine. To avoid any deformation of the whole of the face of this figureine, the parts 10 which form the casing are rigidly connected to a frontal extension 17 FIG. 1 which is firmly applied to the inside of nose 6.

Because of the angle of pull and the lag of the lip movement, the lips slide relative to each other, strikingly simulating the emission of speech or the attitude of a sucking baby. It will be noticed that when an object is introduced into opening 18 formed for this purpose between lips 4 and 5, the said object, which may be a dummy, a toy feeding-bottle, etc. . . . , is itself moved by the above-mentioned lips in an alternating, rocking motion, even when the doll is in the horizontal, lying-down position.

To the assembly described above may be added an electric circuit-breaker or commutator controlled by the object introduced through opening 18. As shown, such a circuit breaker may include two metallic strips 19 and 20, fixed laterally against casing 10 — 10; strip 19 being rigidly connected to a stud 19a which acts as a contact and keeps strips 19 and 20 at a sufficient spacing to allow passage of rods 7 and 8. Wires 21 and 22, attached to strips 19 and 20, permit connection of the circuit breaker into the supply circuit of any electric motor; this may either be motor 14 or the motor associated with a mechanism such as 23 housed in the body of the doll (sound reproduction apparatus, movement mechanism associated with the arms or legs, etc. . . . ).

I claim:

1. A doll or similar toy figureine, comprising a hollow head of elastically deformable material shaped to re-
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produce a face including a mouth formed by two superimposed lips disposed below a nose, a casing fixedly mounted within the hollow head, a drive mechanism for moving said lips mounted within said casing, said drive mechanism including a wheel journaled in said casing, cylindrical studs eccentrically mounted on opposed lateral surfaces of said wheel; operating rods for the lips, respectively, each rod having one end attached to its related lip and the other end having an annular head rotatably mounted on a related one of said studs, said drive mechanism including means for driving said wheel; whereby as the wheel is rotated each said rod will be displaced in a direction generally along its longitudinal axis to impart to the lips, respectively, a generally reciprocating motion which displaces the corresponding lips in a direction generally perpendicular to the vertical plane of the doll's face.

2. A doll according to claim 1, wherein the wheel of the drive mechanism imparts a movement of lesser amplitude to the operating rod associated with the upper lip than to the one associated with the lower lip.

3. A doll according to claim 1, wherein the points of maximum eccentricity of the two eccentric studs are radially spaced by an angle of approximately 90° whereby the movements of the two lips will be relatively staggered.

4. A doll according to claim 1, wherein the eccentric stud associated with the rod for operating the upper lip is situated at a radius of eccentricity smaller than that of the eccentric stud associated with the rod for operating the lower lip.

5. A doll according to claim 1, wherein each rod is made of a semi-rigid synthetic material.

6. A doll as set forth in claim 1, wherein said wheel is toothed; said driving means including a motor mounted in said casing having a shaft disposed adjacent the periphery of the wheel; and a worm fixed on said shaft meshing with said toothed wheel.

7. A doll as set forth in claim 1, said casing having a frontal extension firmly contacting the head adjacent to the nose.

8. In combination with a doll as set forth in claim 6, said motor being electric; an electric circuit including said motor; a circuit breaker controlled by an object to be introduced through the mouth and including a pair of spaced metallic strips secured to said casing and having their outer ends spaced from the operating rods, the outer ends terminating adjacent the doll's mouth and being outwardly flared, said strips being connected in the said electric circuit, and said strips carrying normally closed electric contacts adapted to separate whenever said flared ends of the strips are moved sufficiently apart by such object to open the electric circuit.

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