United States Patent

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[54] **KISS-THROWING DOLL**
12 Claims, 6 Drawing Figs.

[52] **U.S. Cl.** **46/117**
[51] **Int. Cl.** **A63h 5/00**
[50] **Field of Search** 46/116, 117, 118

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ABSTRACT: A doll is provided with a bent arm pivotally mounted so as to bring the bent arm in the vicinity of a doll's mouth upon rotation of the arm in response to the pulling of a drawstring. When the doll's hand is in the vicinity of the doll's mouth, a spring, which is cocked during the pivoting movement of the arm, is released substantially simultaneously with the actuation of a sounding device which produces a simulated kissing sound. The mechanism is such that the movement of the arm under the influence of the spring will be comparatively rapid with respect to the movement of the arm to the proximity of the doll's mouth. The rapid movement of the arm accompanied by the simulated kissing sound simulates the throwing of a kiss by the doll.

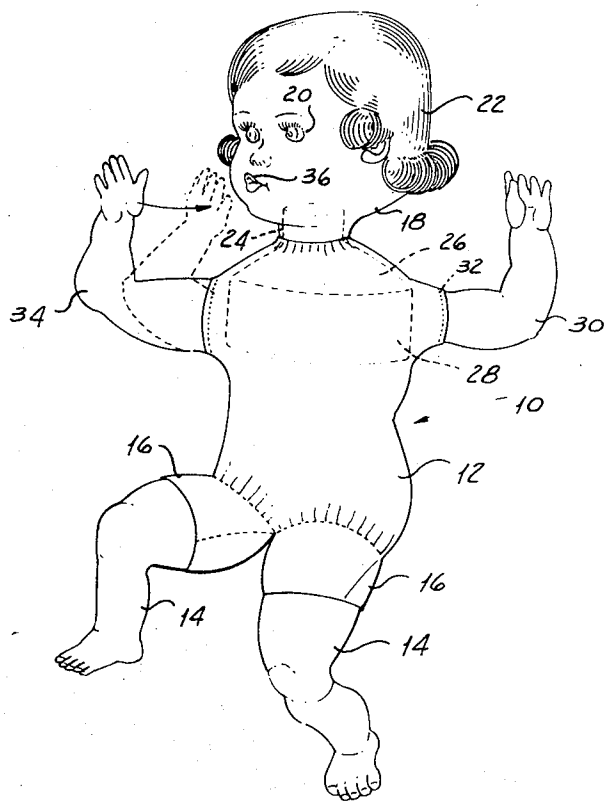


Fig 1

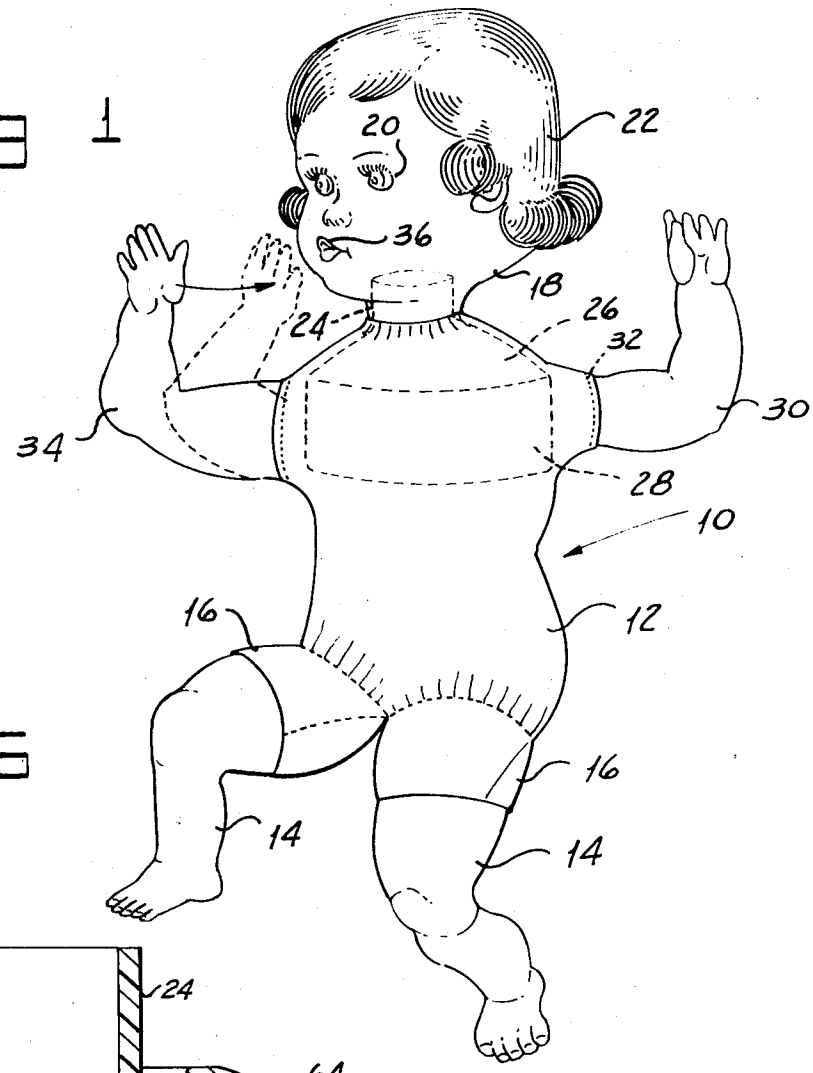
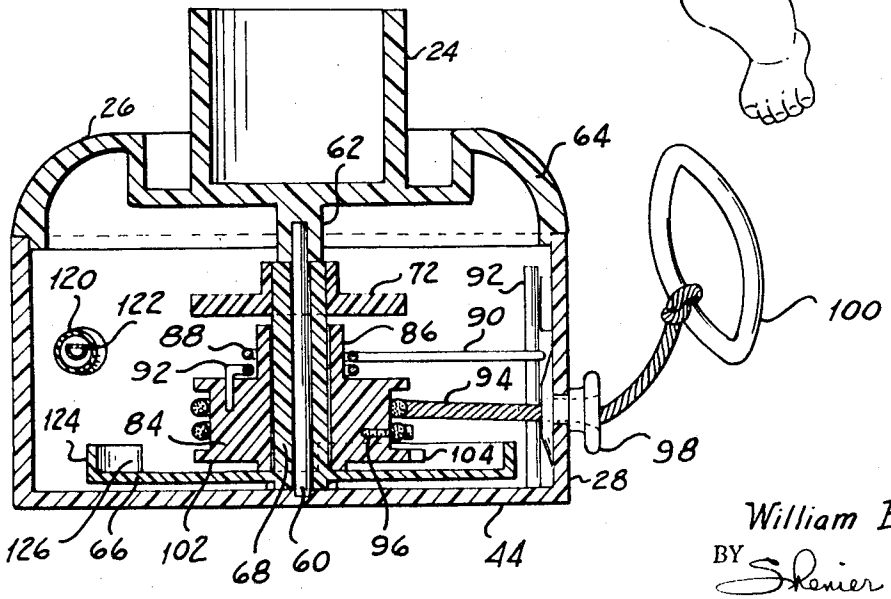
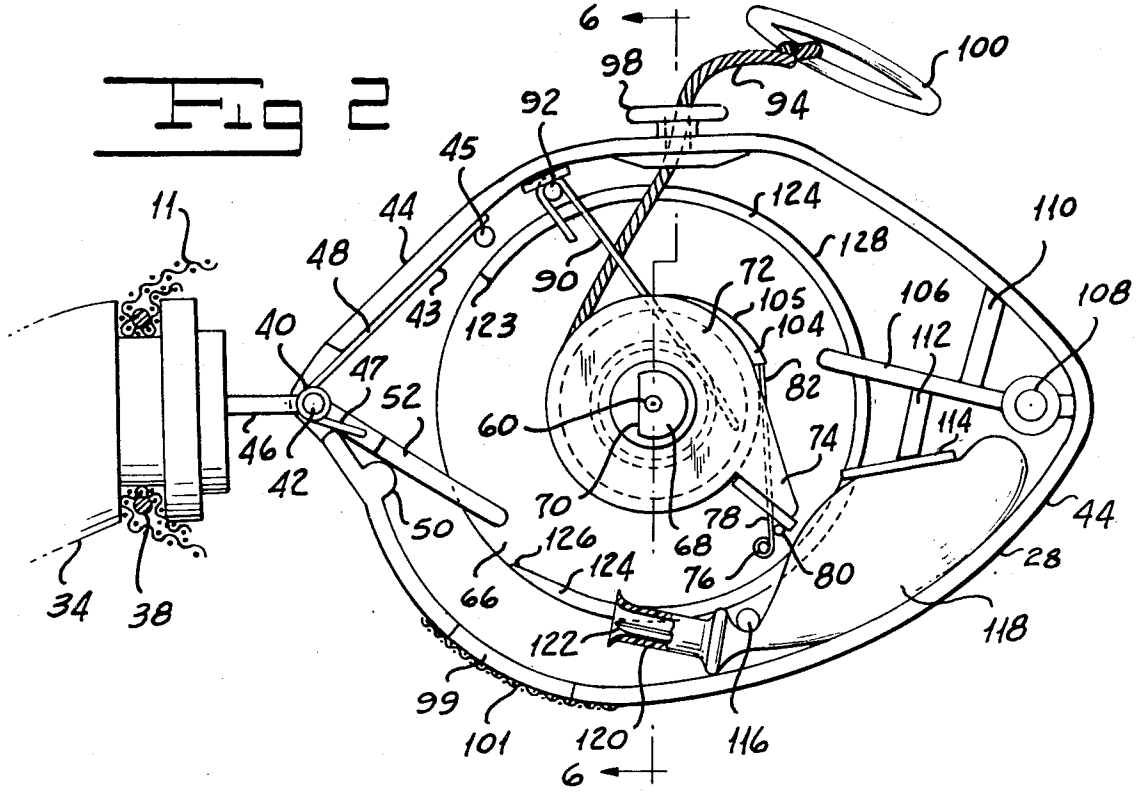


Fig 6



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Fig 2



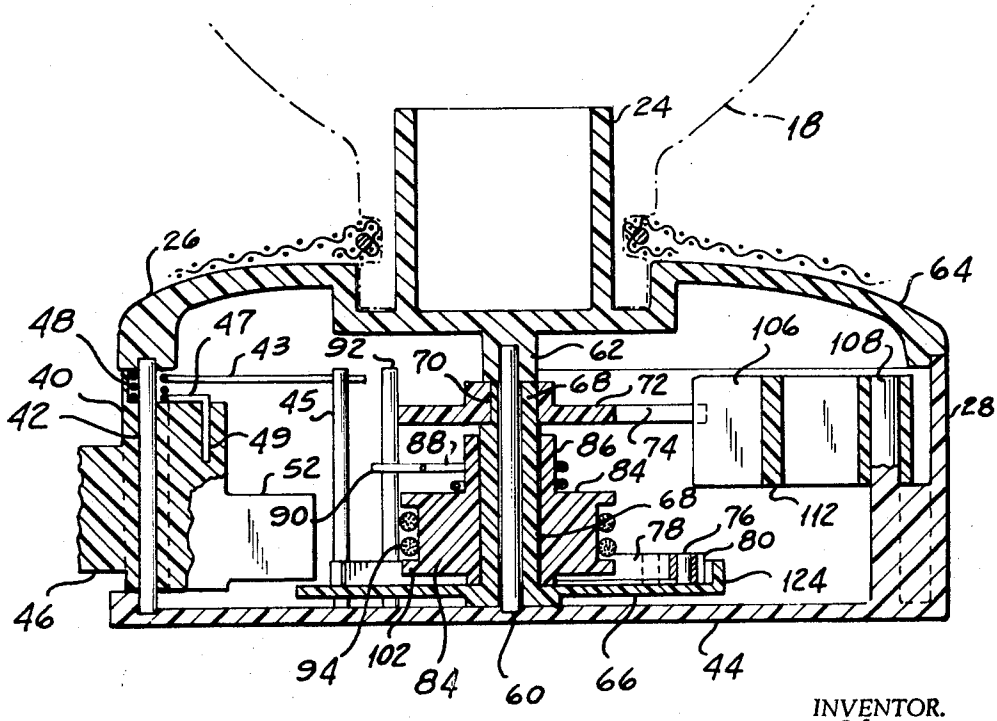


Fig 5

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Fig 3

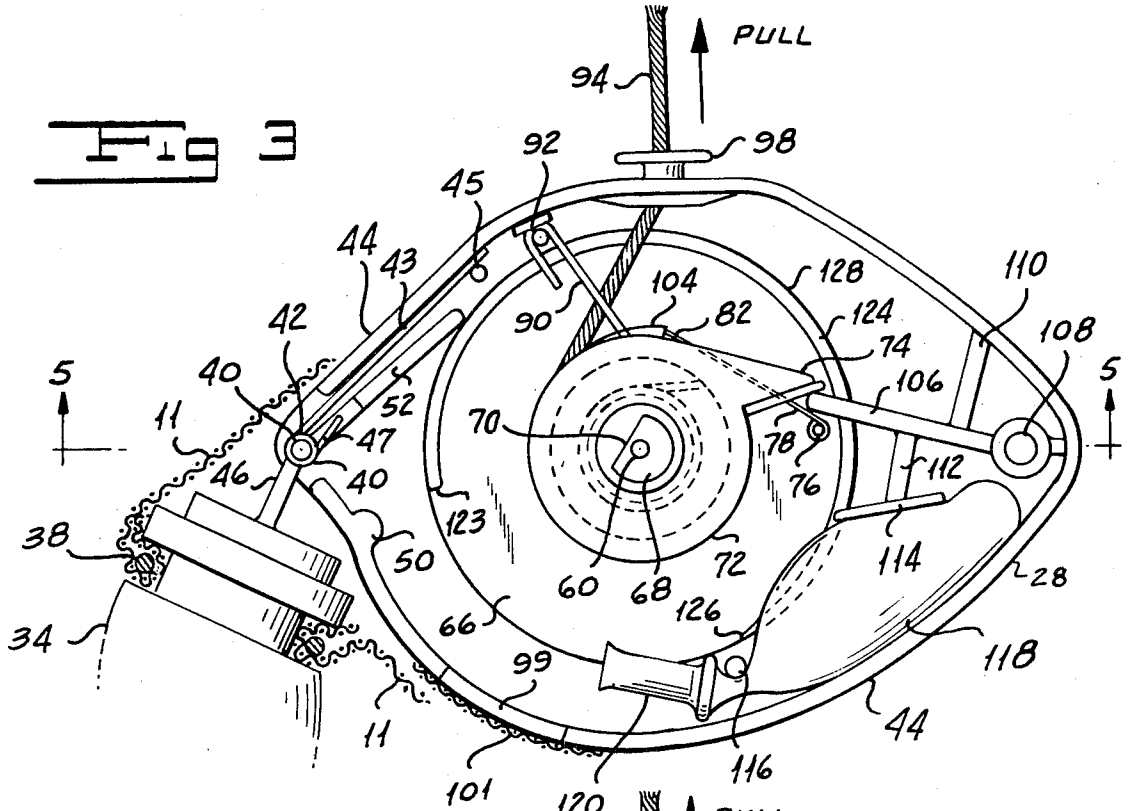
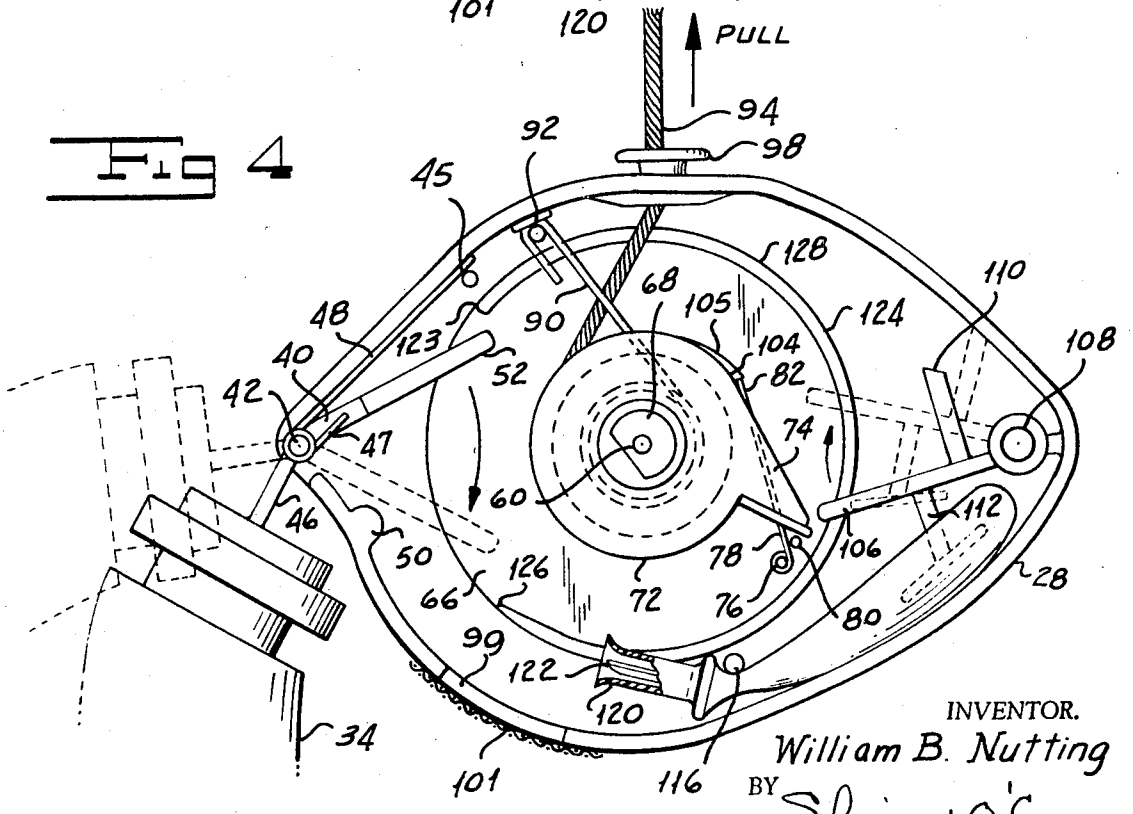


Fig 4



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KISS-THROWING DOLL

BACKGROUND OF THE INVENTION

My invention relates to a kiss-throwing doll and more particularly to an animated doll in which a movement of the doll's arm carrying its hand to the vicinity of the lips is followed by a throwing action accompanied by a simulated kissing sound accomplished in a realistic, entertaining manner.

Dolls capable of producing simulated kissing sounds are known to the art. In some, lip movements have been simulated. Such lip movements must, by necessity, be of small amplitude. Such small motions are difficult to observe. These dolls offer but a small advance over the most primitive rubber dolls provided with whistles, which produce peeping sounds when the dolls are squeezed.

SUMMARY OF THE INVENTION

One object of my invention is to provide a doll animated to throw a kiss in synchronism with a simulated kissing sound.

Another object of my invention is to provide a doll in which the animation mechanism will bring the arm and hand to the vicinity of the mouth at a comparatively slow speed followed by a rapid throwing motion accompanied by a simulated kissing sound produced in phase with the throwing motion.

Another object of my invention is to provide a sturdy, simple mechanism for producing both animation of a doll's arm simulating a throwing motion and a simulated kissing sound in correct phase relationship.

Another object of my invention is to provide a kiss-throwing doll which will throw a kiss and produce a simulated kissing sound during each cycle upon the operation of a drawstring.

Another object of my invention is to provide a kiss-throwing mechanism adapted to support the head of a doll and an animated arm thereof which can be readily assembled in a large variety of doll bodies.

Another object of my invention is to provide a kiss-throwing doll mechanism which can be inexpensively and readily mass produced and yet when assembled will perform reliably over long periods of time.

Another object of my invention is to provide a kiss-throwing mechanism which can be readily manufactured from synthetic resins.

Other and further objects of my invention will appear from the following description.

In general, my invention contemplates the provision of a housing provided with a central shaft upon which I mount a rotatable driving spool for oscillatory movement under the influence of a drawstring in one direction and under the bias of a coil spring in the other direction. The driving spool is provided with one member of an overrunning clutch assembly adapted to cooperate with the other member of the overrunning clutch assembly carried by a lower rotary cam. A doll's arm and hand are pivotally mounted on the housing biased to an outstretched position. The rotary cam is adapted to coact with a lever secured to the arm and pivot the arm to bring the hand to the vicinity of the lips of the doll which are mounted on the housing. This pivoting action is against the bias of a spring, urging the arm to its extended position. The rotary cam is adapted to hold the hand in the vicinity of the lips while an upper second cam keyed to the lower cam for rotation therewith compresses a bladder to which a tube containing a sound producing reed is attached. The arrangement of parts is such that the second cam first compresses and then releases the bladder, at the same instant the first cam releases the cocked arm. There is thus produced a simultaneous, rapid outward motion of the hand and arm under the action of the arm biasing spring and a simulated kissing sound is created by the sudden expansion of the compressed bladder sucking air into and through the sound producing reed. During the pulling of the drawstring, the rotary driving spool of the overrunning clutch engages its corresponding element carried by the lower cam and winds up a coil spring. Upon release of the drawstring, the rotary spool, under the influence of a coil spring, rotates in the opposite direction from that during the first animation movement and the clutch elements overrun to allow the parts to assume their original position for the next cycle of operation.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings which form a part of the instant specification and which are to be read in conjunction therewith and in which like reference numerals are used to indicate like parts in the various views:

FIG. 1 is a perspective view of a doll showing the amplitude of motion of the doll's right arm and hand during the kiss-throwing cycle and indicating the position of the housing containing the kiss-throwing mechanism within the doll.

FIG. 2 is a top plan view of the housing for the kiss-throwing mechanism with the housing cover removed showing the parts in a relaxed position with the drawstring wound on the operating spool.

FIG. 3 is a view similar to FIG. 2 showing the arm in cocked position when the hand is in proximity to the lips and with the upper cam engaging the bladder compressor arm to compress the bladder in preparation for the kiss-throwing sound.

FIG. 4 is a view similar to FIG. 2 showing the position of the parts at the moment the arm is released and the compressed bladder is released so that a simultaneous throwing motion and kiss-producing sound will occur.

FIG. 5 is a sectional view with the housing cover in place taken along the line 5—5 of FIG. 3.

FIG. 6 is a sectional view taken along the line 6—6 of FIG. 2 with the housing cover in place.

DESCRIPTION OF THE PREFERRED EMBODIMENT

More particularly, referring now to FIG. 1, a doll indicated generally by the reference numeral 10 is provided with any suitable body 12 such as fabric stuffed with natural or synthetic comminuted rubber. Simulated legs 14 may be formed of synthetic resin and secured to the thigh portions 16 by any appropriate manner, such as by stitching, adhesive, tie cords or the like. A doll's head 18 molded in a pleasing configuration and daintily tinted, is molded from any appropriate synthetic resin which may be flexible or rigid. The doll's head is provided with eyes 20 which may be movable, if desired, and with simulated or genuine hair 22. The neck portion of the doll is adapted to be secured over a tubular member 24 formed integrally with a cover of a housing 28 in which the kiss-throwing mechanism is located. This housing 28 is secured to the upper portion of the doll in any appropriate manner as can be readily seen by reference to FIG. 1. One of the doll's arms, as for example the left arm 30, is attached to the fabric cover in any appropriate manner, as by a tie cord 32. This arm is not intended to move and is positioned in a bent, slightly outstretched position substantially symmetrically with the right arm 34. The lips 36 of the doll's head may be formed in a slightly pursed position as if preparing to kiss.

Referring now to FIG. 2, the doll's right arm 34 is carried by one lever arm 46 of a lever 40 pivoted on a pin 42 carried by a housing 44. Fabric 11, with which the body is covered, is secured to the right arm 34 by a tie cord 38 with sufficient slack to permit the arm to move through its pivotal ambit. The other end of the arm 52 of lever 40 extends into the housing 44 and is urged by sear spring 48 against the stop 50 formed in the housing. One leg 43 of the sear spring is positioned between the housing 44 and the post of 45. The other leg 47 of the sear spring is formed with a downwardly extending portion 49 secured to the arm 52, as can be seen by reference to FIG. 5.

Referring now to FIG. 5, a shaft 60 is mounted between the bottom of the housing 44 and a socket 62 formed in the housing cover 64. An interrupted double cam 66 is formed with an integral sleeve 68, the upper end of which is formed with a flattened portion 70. Positioned over the top of sleeve 68 and

constrained to move with cam 66 by the flattened portion 70, I position a jump cam 72 provided with a nose 74. A post 76 positions a fixed flat spring 78 between it and a second post 80. As viewed in FIG. 2, post 80 prevents the outer end 82 of the flat spring 78 from moving to the right but permits it to flex to the left. The end of the flat spring surrounding the post 76 is secured thereto in any appropriate manner, such as by an adhesive, so that there will be no relative rotation between the post 76 and the flat spring 78. An oscillating spool 84 is loosely positioned about the sleeve 68 and is provided with an integral bushing 86 around which wire coil spring 88 is mounted.

Referring now to FIG. 6, the wire spring 88 is wound around the bushing 86 with one leg of the spring 90 positioned behind post 92 mounted on the housing 44. The other leg 92 of the wire spring extends downwardly and is secured to the spool. I wrap a drawstring 94 around the spool with one end 96 secured thereto. The other end of the drawstring extends out through an eye of the grommet 98 and is secured to a ring 100. The arrangement is such that upon pulling of the ring 100, the spool rotates in a clockwise direction as viewed in FIG. 2 and winds the wire spring. Upon releasing of the tension on the ring 100, the spool will unwind and rotate in a counterclockwise direction as viewed in FIG. 2. The lower flange 102 of the spool 84 is provided with lug 104 positioned to contact the end 82 of the flat spring 78, as can be readily seen by reference to FIG. 2. As the drawstring 94 is pulled, the double cam 66 will be constrained to rotate in a clockwise direction as will the jump cam 72.

Referring now to FIG. 2, an arm 106 is mounted for rotation about a post 108 formed in the housing 44. The arm, as provided, is formed with an extension 110 adapted to contact the inside of the wall of the housing 44 and limit the clockwise movement of the arm 106, as viewed in FIG. 2. The arm 106 is provided with a second extension 112 carrying a plate 114. A post 116 formed in the housing 44 positions a rubber bladder 118 formed of material sufficiently stiff to move to expanded position when unconstrained. The end of the bladder is fitted with a nozzle 120 which carries a sounding device 122 so positioned that it will produce a "beeping" sound upon the expansion of the bladder 118. The interrupted cam 66 is provided with an upstanding cam flange 124 having a rounded nose 126 adjacent the interrupted portion. The nose 126 is so constructed as to engage the arm 52 of the lever 40 to pivot it in a counterclockwise direction, as viewed in FIG. 2 when the cam 66 moves in a clockwise direction. The outer surface 128 of the interrupted cam 66 is adapted to hold the arm 52 of the lever 40 to the position it is moved by the cam nose 126 until the interrupted portion of the upstanding cam flange 124 permits it to assume the position as shown in FIG. 2 under the influence of the sear spring 48.

In operation, with the parts shown in the position shown in FIG. 2, the doll's arm 34 is in the position shown in full lines in FIG. 1 under the influence of the sear spring 48, and the wire spring 88 is in relaxed position. The lug 104 is in engagement with the end 82 of the flat spring 78. The bladder 118 is substantially expanded. The arm 106 has been moved by the expansion of the bladder 118 so that its extension 110 is against the interior of the housing 44. The housing 44 is provided with an opening 99 through which the sound may pass and is covered with a foraminous material 101 to prevent the doll's stuffing from entering the housing and interfering with the operation of the mechanism. The ring 100 is pulled to extend the drawstring 94, rotating the cam 66 in a clockwise direction and winding the wire spring 90. The nose 126 engages the arm 52 of the lever 40 and rotates it in a counterclockwise direction, as viewed in FIG. 2, moving the arm substantially parallel to the left-end portion of the housing against the action of the sear spring 48. This brings the doll's arms 34 to the dotted line position shown in FIG. 1 in proximity to the doll's mouth in preparation of the simulation of a kiss-throwing movement. The rate of this movement will depend on the rapidity with which the drawstring is pulled. A continued pulling on the drawstring will bring the parts into the position shown in FIG. 3. It will be observed that the arm 52 of the lever 40 is maintained with the doll's arm in proximity to the doll's mouth owing to its bearing upon the surface 128 of the interrupted cam flange 124.

As can be seen by reference to FIG. 3, the nose 74 of the jump cam 72 has contacted the end of arm 106 so that continued movement of the drawstring 94 will rotate the arm 106 in a counterclockwise direction as viewed in FIG. 3. This movement of the arm 106 from the dotted line position to the full line position in FIG. 4 compresses the bladder 118 and drives air from it. The dimensions of the cam flange 124 are such that the end 123 will release the arm 52 at substantially the same time that the nose 74 of the jump cam will move away from the end of arm 106. When this occurs, the sear spring 48 brings the arm sharply from the dotted line position in FIG. 1 to the full line position owing to the rotation of the arm 46 in a clockwise direction. Simultaneously with this simulated throwing movement of the doll's arm 34, the bladder expands sharply, moving the arm 106 from its full line position to the dotted line position as viewed in FIG. 4. The expansion of the bladder also sucks air into the bladder past the sounding device 122 and produces a "beeping" sound simulating the sound of a kiss. When the drawstring is released, the oscillating spool moves in a counterclockwise direction, as viewed in FIGS. 2, 3 and 4. During this movement, the lug 104 will flex the end of flat spring 82 to the right owing to the cam surface 105 formed on the outside of the lug 104. It will be seen that the lug 104 and the flat spring 78 perform as a simple, but efficient, overrunning clutch permitting the oscillating spool to rotate in a counterclockwise direction without driving the cam 66 but constraining the cam 66 to move in a clockwise direction when the oscillating spool 84 is moved in a clockwise direction by pulling upon the drawstring 94. The counterclockwise movement of the oscillating spool will rewind the drawstring upon the spool and bring the parts back to the position shown in FIG. 2 ready for the next kiss-throwing operation.

The housing cover 26, the housing 28, the lever 40, the interrupted double cam 66, the jump cam 72, the oscillating spool 84 and the arm 106 may be made of any appropriate material. Advantageously, I find I can mold these parts out of a synthetic resin, such as polystyrene. The springs, of course, must be made of spring steel. The pin 42 and the shaft 60 are advantageously made of metal. The drawstring is preferably made of nylon braid.

It will be seen that I have accomplished the objects of my invention. I have provided an animated mechanism for a doll which will bring the doll's arm in the vicinity of a portion of the doll's anatomy, such as the lips, at a relatively slow speed followed by a rapid throwing motion which may be accompanied by a simulated kissing sound produced in phase with the throwing motion. If desired, the arm can be brought to the vicinity of the doll's brow and the rapid movement of the arm away from the brow will simulate a salute. In such case, of course, the doll should simulate a soldier and the kissing sound may be omitted. The doll will then be a saluting doll instead of a kiss-throwing doll. No change in the mechanism need be made. The shape of the arm will be slightly changed so that in the retracted position it is adjacent the brow or the peak of a cap as worn by a soldier doll.

In my kiss-throwing doll the mechanism is simple and sturdy and produces both the animation of a doll's arm and a simulated kissing sound in correct phase relation. The parts are such that they may be mass produced and will perform reliably over long periods of time. The construction of the parts is such that they may be made of synthetic resin.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of my claims. It is further obvious that various changes may be made in details within the scope of my claims without departing from the spirit of my invention. It is,

therefore, to be understood that my invention is not to be limited to the specific details shown and described.

Having thus described my invention, what I claim is:

1. In a kiss-throwing doll, a torso, a head having a mouth mounted on said torso, an arm carrying a hand, means mounting said arm on said torso for movement of said hand between a first position remote from said mouth and a second position adjacent to said mouth, means biasing said arm to said first position, an actuator carried by said torso for movement relative thereto, releasable coupling means for moving said arm from said first position to said second position in response to movement of said actuator in a certain direction, and means responsive to a predetermined movement of said actuator in said direction for releasing said coupling means to permit said biasing means to return said arm to said first position whereby the movement of said hand simulates a kiss-throwing action.

2. A doll as in claim 1 in which said actuator comprises an oscillatory spool.

3. A doll as in claim 1 in which said actuator comprises an oscillatory spool and said coupling means includes an overrunning clutch.

4. A doll as in claim 1 in which said means mounting said arm comprises a lever.

5. A doll as in claim 1 in which said coupling means includes an interrupted cam.

6. A doll as in claim 1 in which said means for mounting said arm includes a lever and said biasing means includes a sear spring.

7. A doll as in claim 1 in which said actuator includes a spool, a wire spring for biasing said spool to rotate in a predetermined direction, and a flexible member wound about said spool.

8. A doll as in claim 1 having a bladder normally biased to expanded condition, means for compressing said bladder, means for coupling said actuator to said bladder compressing means, sound producing means adapted to be actuated upon the expansion of said bladder, the construction of said arm coupling means and said bladder compressing coupling means being such that both are released in substantial synchronism to produce a sound substantially simultaneously with the return movement of the arm.

9. In a doll, a bladder normally biased to expanded condition, a movable actuator, means for compressing said bladder, releasable means for coupling said actuator to said bladder compressing means in response to movement of said actuator in a certain direction, sound producing means adapted to be actuated upon expansion of said bladder, and means responsive to a predetermined movement of said actuator in said direction for releasing said coupling means to permit said bladder to expand to actuate said sound producing means.

10. A doll as in claim 9 in which said actuator comprises an oscillatory spool.

11. A doll as in claim 9 in which said actuator comprises an oscillatory spool and said coupling means includes an overrunning clutch.

12. A doll as in claim 9 in which said coupling means includes a jump cam.