July 7, 1953 A. ROMANO 2,644,273

ANIMATED MOTOR ACTUATED WALKING DOLL

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Fig. 1

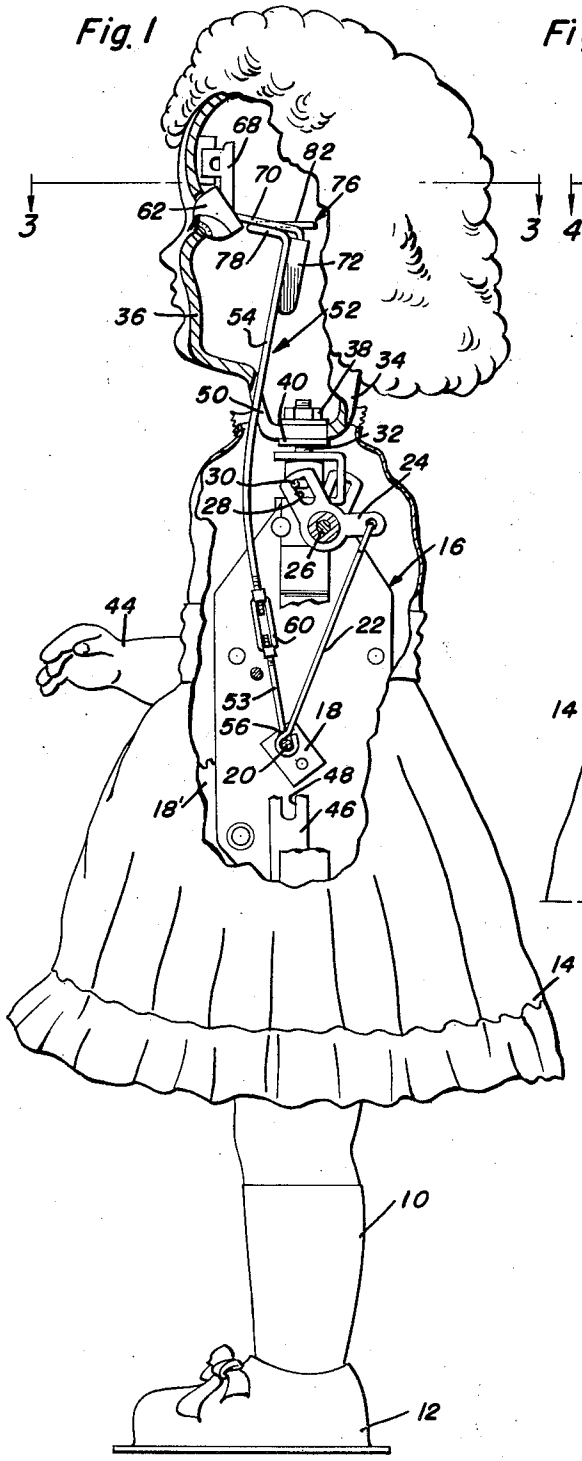
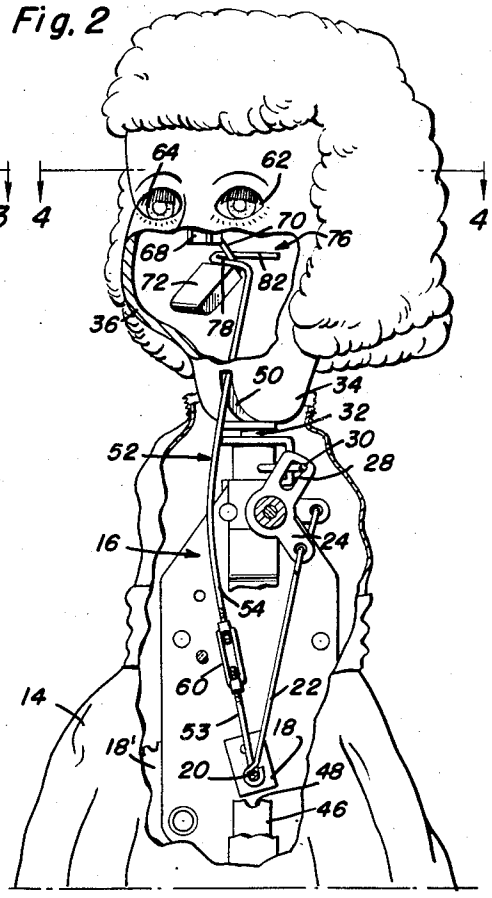


Fig. 2



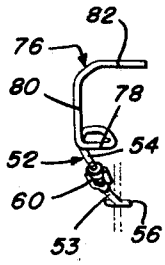


Fig. 6

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Fig. 3

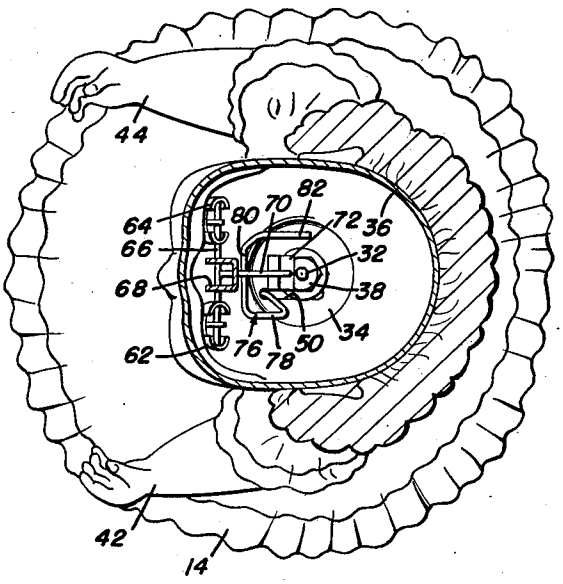


Fig. 4

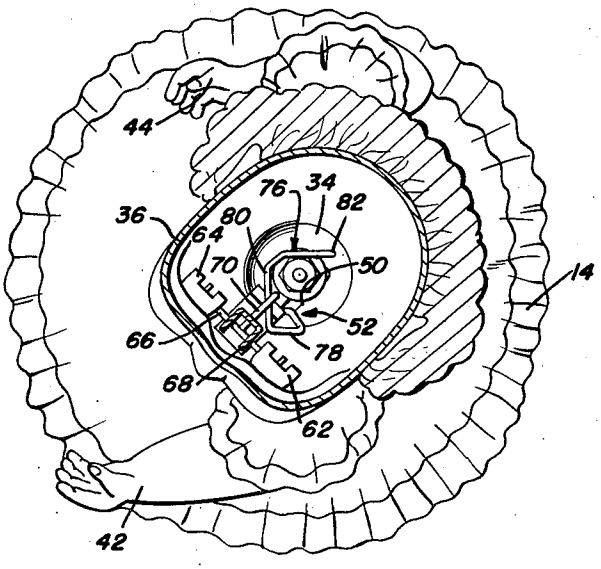
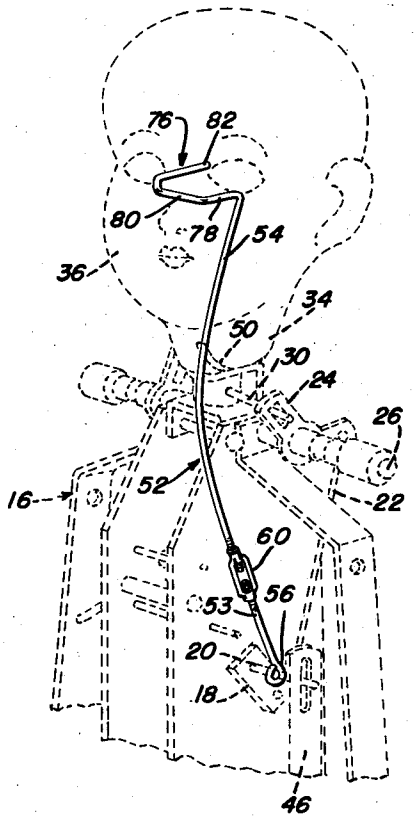


Fig. 5



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Patented July 7, 1953 2,644,273

UNITED STATES PATENT OFFICE

2,644,273

ANIMATED MOTOR ACTUATED WALKING DOLL

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Application April 18, 1951, Serial No. 221,563

5 Claims. (Cl. 46—150)

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This invention relates to improvements in walking dolls of the general type disclosed in the Domowitch et al. Patent No. 1,992,477.

An object of this invention is to provide an improved doll of the animated type by incorporating an extensible link therein, one end of the link being operatively connected with a crankshaft constituting a part of the operating mechanism for the doll and the other end of the link being provided with a crank which is engageable with a rocker, this rocker being connected with a pair of oscillating eye members so that upon operation of the standard motor of the doll, the link is actuated thereby imparting an oscillatory movement to the eye members of the doll.

A further object of this invention is to provide a mechanism for causing the eye members to move in response to tilting movement of the head case of the doll, this means comprising a counterweight which extends laterally of the eye member rocker so that it constitutes a stop for the upper end of the link which operates the rocker, preventing the upper end of the link from separating from the rocker.

Ancillary objects and features of importance will become apparent in following the description of the illustrated form of the invention.

In the drawings:

Figure 1 is an elevational view of the doll having the attachment therein, the eye members being in a closed position and the structure for operating the eye members being in a corresponding position;

Figure 2 is a fragmentary elevational view of the structure of Figure 1, portions being broken away in section to illustrate internal detail, showing the position of the link, rocker and counterweight when the eyes of the head case are in the open position;

Figure 3 is a transverse sectional view taken on the line 3—3 of Figure 1 and in the direction of the arrows;

Figure 4 is a transverse sectional view taken on the line 4—4 of Figure 2 and in the direction of the arrows;

Figure 5 is a perspective view of the link which is employed for causing the eye members to oscillate, portions of the standard structure being shown in dotted line; and,

Figure 6 is a top view of the link illustrating the various curvatures thereof.

In the Domowitch patent (supra) the broad concept of providing a walking doll of such construction that the arms move, the broad idea of having a pair of eyes move in response to operation of the arms and legs is disclosed. I have illustrated considerable standard structure of an animated doll in order to show the integration of my improvement therewith. The doll includes a pair of legs 10 with shoes 12, the shoes being provided with standard means enabling the shoes to move forward and retain the new position forward, this means being purely conventional and not shown. There is a dress 14 disposed on the body of the doll, the body including a frame generally indicated at 16. This frame is also a standard part being provided with a conventional spring motor, of which the gear 18' constitutes a part. Also forming a part of the conventional spring motor is a crankshaft 18, a throw 20 of which on each end having a pitman 22 connected therewith, which are pivotally connected to levers 24 which are fixed to a horizontal shaft assembly 26, the shaft assembly being supported by a suitable part of the frame 16. One of the levers 24 has a slot 28 in it accommodating a pin 30, the pin being fixed to a spindle 32 which rises vertically from its bearing in the top part of the frame 16 and which supports the neck 34 of a head case 36, the head case being of hollow construction. Standard means are used for securing the neck portion 34 of the head case 36 to the spindle, an example of such standard means being the nut 38 threaded on the spindle 32 pressing the lower end of the neck portion 34 against a fixed collar 40 which is located on the spindle 32.

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Included among the standard structure of the illustrated animated doll are the arms 42 and 44, these arms being fastened to the outer ends of the shaft assembly 26. Not only is the function of the crankshaft 18 to oscillate the levers 24 but also links 46 having slots 48 at their upper ends are connected by means of the slots to the crankshaft 18, the lower ends of the link and other standard structure not shown being employed to move the legs 10 in an oscillating manner.

The neck portion 34 of the head case 36 is provided with a slot 50 through which a link 52 is adapted to pass. This link includes a lower section 53 and an upper section 54, the two sections being joined together by a means capable of holding the sections in selected extended positions with respect to each other so that the total length of the link 52 may be regulated in accordance with the needs of the particular doll having the link applied thereto. The lower end of the link 52 is provided with an eye 56 which is disposed on the throw 20 of the crankshaft 18, the

upper end of the section 53 to which the eye is connected being threaded, the threads constituting a part of the means of extensibly connecting the sections 53 and 54. The lower end of the upper section 54 is also threaded and there is a turnbuckle 60, internally threaded sleeve or the like connected with the threads at the confronting ends of the sections 53 and 54 whereby the two sections 53 and 54 may be selectively brought together or extended relative to each other, the purpose being to adapt the link to various animated dolls and also to adjust the degree of opening and closing of the two eye members 62 and 64 which are located in the head case 36.

The eye members are connected together for uniform movement by a shaft 66 which is fixed at its ends to the eye members, this shaft being carried in bearings in the mounting bracket 68, the mounting bracket being fixed to the interior of the hollow head case 36 in such position that the eye members 62 and 64 are located immediately behind apertures in the front of the head case 36.

A rocker 70 is fixed at its inner end to the shaft 66 and projects toward the interior of the head case 36. The rocker has at its opposite end a counterweight 72 which extends laterally from the rocker 70 and serves two functions. The first function of the counterweight 72 is to cause the eye members 62 and 64 to be moved in response to tilting movement of the head case 36. Accordingly, when the doll is laid down in a rest position, the eye members assume a closed condition regardless of the position of the link 52 at that particular time. The second function of the counterweight 72 is to prevent the crank 76 at the upper end of the link 52 from separating from the rocker 70. The crank 76 constitutes a means to impart movement to the rocker 70 in response to operation of the crankshaft 18. It is to be noted that the link 52 is smoothly curved from the eye 56 to the arm 78 of the crank 76. At the outer end of the arm 78 there is a right angularly disposed part 80, the outer end of which has another right angularly disposed extension 82, the extension 82 and the arm 78 being substantially parallel. The crank 76 lies under the rocker 70, the rocker being gravitationally pulled, by the counterweight 72, into contact therewith so that there is a sliding contact between the rocker 70 and the crank 76. Since the counterweight 72 extends laterally from the rocker 70, as the link 52 is operated, the crank 76 rides under the rocker 70. However, at the same time the head case 36 is oscillated by its spindle 32 whereby there is a relative lateral sliding movement between the crank 76 and the rocker 70. When the head case 36 is tilted so that the doll assumes a rest position, the counterweight is gravitationally pulled to such position that the eye members 62 and 64 assume a closed position, but the counterweight does not move sufficiently far away from the crank 76 as to cause complete separation of the crank 76 from the rocker 70 and counterweight 72. By virtue of this construction when the doll is again elevated to the position disclosed in Figure 1, the counterweight 72 pulls the rocker 70 downwardly so that it is in contact with the crank 76.

The total visible operation of the walking doll then is that the legs 10 are walking, the arms 44 are moving, the head case 36 is oscillating, and the eye members 62 and 64 are moving.

Having described the invention, what is claimed as new is:

1. In an animated walking doll which includes a motor operated crankshaft, a movable head case, means connected to said crankshaft and said case for oscillating said head case, a pair of eye members mounted for rocking movement in said head case, and a pair of oscillatable supporting legs connected to the crankshaft to be actuated thereby, a rocker connected with said eye members, a link connected at one end to said crankshaft, and means at the opposite end of said link and arranged to impart movement to said rocker in response to operation of said crankshaft, the last mentioned means comprising a crank provided at the extremity of said link which is slidingly contacted by said rocker, a counterweight fixed to the outer end of said rocker and extending laterally of said rocker, said counterweight being arranged to operate said rocker in response to tilting said head case, and said counterweight constituting a stop for said crank preventing said crank from separating from said rocker.

2. In a walking doll which includes a motor operated crank shaft and a frame, a head case mounted for oscillation on said frame and means connected to said crank shaft and said head case for oscillating said head, and a pair of oscillatable legs engaged with the crankshaft to be actuated thereby; the improvement comprising a pair of eye members mounted rockably in the head case, a rocker attached to and extending from said eye members and adapted to operate said eye members, a counterweight supported on and extending laterally from said rocker, a link connected to the crankshaft and having a crank at its upper end, said head case being provided with a slot through which said link passes, and said crank being in contact with said rocker to impart rocking movement thereto for actuation of said eye members in response to operation of said crankshaft.

3. In a walking doll which includes a motor operated crankshaft and a frame, a head case mounted for oscillation on said frame, means connected to said crankshaft and said head case for oscillating said head, and a pair of oscillatable supporting legs connected to said crankshaft to be actuated thereby, the improvement comprising a pair of eye members mounted rockably in the head case, a rocker attached to and extending from said eye members and adapted to operate said eye members, a counterweight supported by and extending laterally from said rocker, a link connected to the crankshaft and having a crank at its upper end, said head case being provided with a slot through which said link passes, and said crank being in contact with said rocker to impart rocking movement thereto for actuation of said eye members in response to operation of said crankshaft, said counterweight extending laterally from said rocker to maintain said rocker in contact with said crank and said counterweight constituting a stop preventing said crank from separating from said rocker.

4. In a walking doll which includes a motor operated crankshaft and a frame, a head case mounted for oscillation on said frame, means connected to said crankshaft and said head case for oscillating said head, and a pair of oscillatable supporting legs connected to said crankshaft to be actuated thereby; the improvement comprising a pair of eye members mounted rockably in the head case, a rocker attached to

and extending from said eye members and adapted to operate said eye members, a counterweight supported by and extending laterally from said rocker, a link connected to the crankshaft and having a crank at its upper end, said head case being provided with a slot through which said link passes, and said crank being in contact with said rocker to impart rocking movement thereto for actuation of said eye members in response to operation of said crankshaft, said link including an upper and a lower section, and means extensibly connecting said sections together for adjusting the effective length of said link to thereby adjust the path of travel of said rocker.

5. In an animated walking doll which includes a movable head case, a motor operated crankshaft, means connecting the crankshaft to the head case for oscillating the latter, a pair of oscillatable supporting legs, means connecting the legs to the crankshaft to impart oscillatory movement to the legs for the purpose of moving the doll, a pair of eye members mounted for rocking movement in the head case, a rocker connected to the eye members and a counterweight supported on and extending laterally from the rocker; an actuator for the rocker comprising upper and lower bendable rod sections having adjacent threaded ends, a turnbuckle joining the adjacent threaded ends of said rod sections, the lower end of said lower rod section terminating in an eye engaged over said crankshaft whereby said rod sections will be reciprocated during rotation of said crankshaft, said upper rod section extending upwardly from the crankshaft and into said head case, and a laterally projecting hook element at the upper end of said upper rod section slidably engaging said rocker to rock the latter during reciprocation of said rod sections, said turnbuckle being rotated to adjust the adjacent ends of said rod sections selectively toward and away from each other to adjust the path of travel of said rocker.

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