

C. W. CLARK.
MECHANICAL TOY.
APPLICATION FILED JAN. 28, 1909.

921,364.

Patented May 11, 1909.
2 SHEETS—SHEET 1.

Fig. 1.

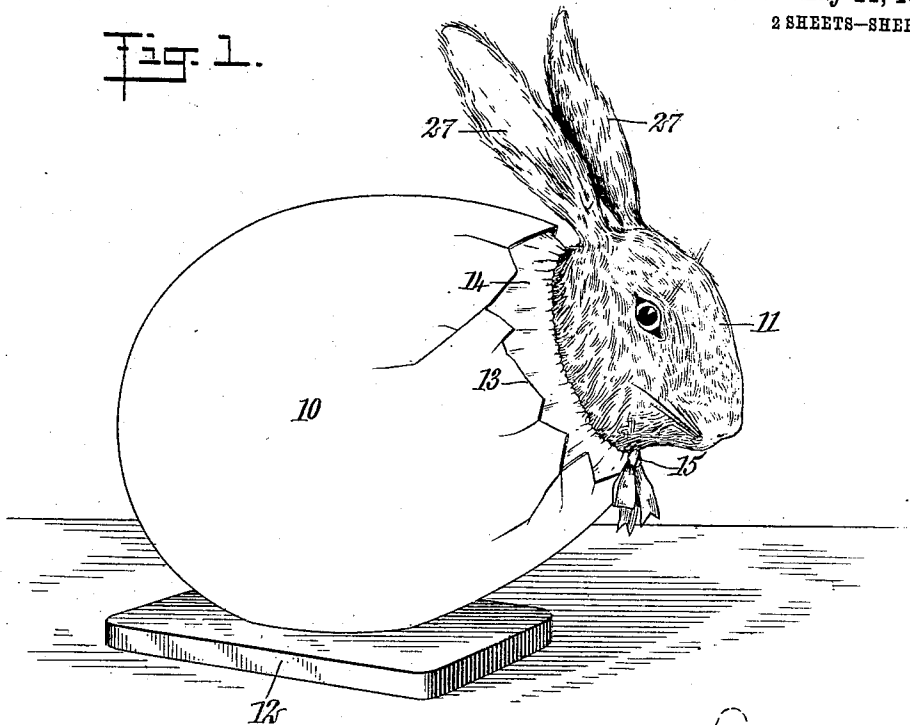
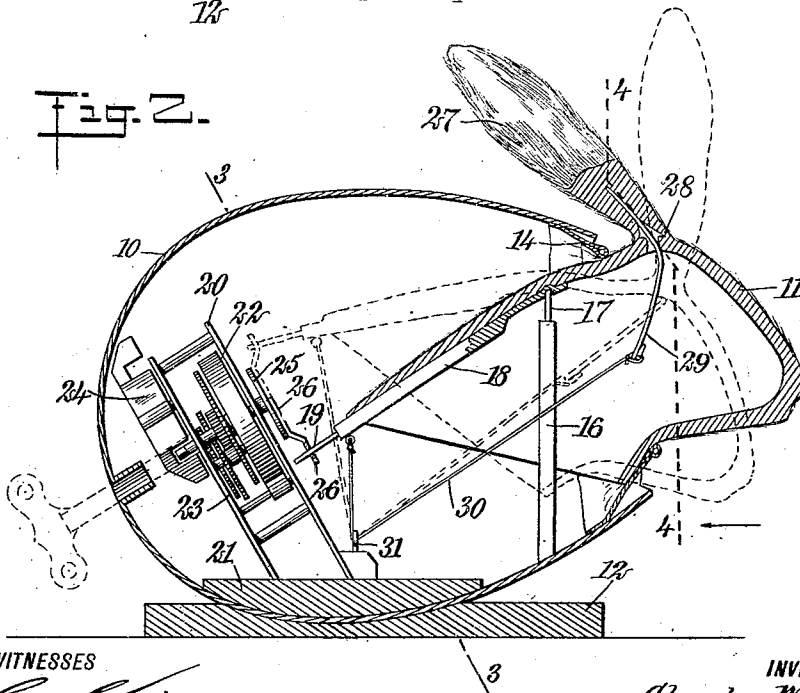


Fig. 2.



WITNESSES

E. C. Fairbank
C. W. Fairbank

INVENTOR

Charles W. Clark
BY *Wm. Co.*

ATTORNEYS

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2 SHEETS—SHEET 2.

Fig. 3.

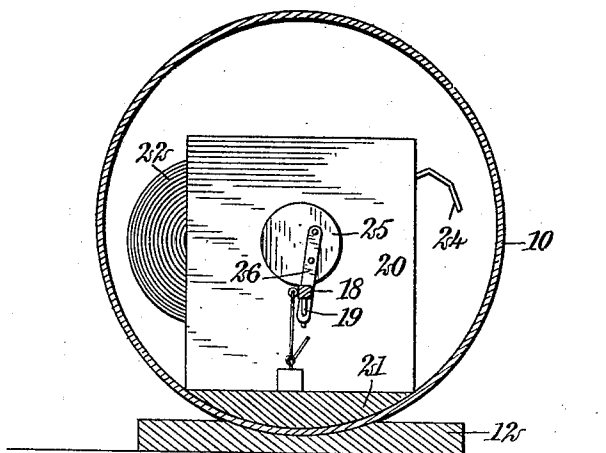
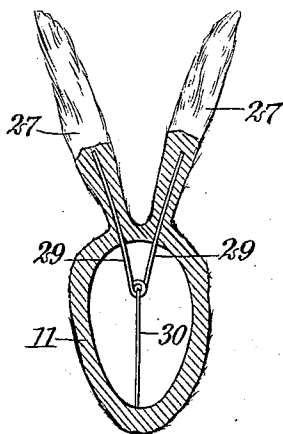


Fig. 4



WITNESSES

W. B. King
C. W. Fairbank

INVENTOR

Charles W. Clark

BY *Mummales*

ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES W. CLARK, OF NEW YORK, N. Y., ASSIGNOR TO E. I. HORSEMAN CO., OF
NEW YORK, N. Y., A CORPORATION.

MECHANICAL TOY.

No. 921,364.

Specification of Letters Patent.

Patented May 11, 1909.

Application filed January 28, 1909. Serial No. 474,839.

To all whom it may concern:

Be it known that I, CHARLES W. CLARK, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Mechanical Toy, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in mechanical toys, and more particularly to that type of toys which are constructed to represent animals and which have mechanism for giving one or more parts of the animal, for instance, the head, a life-like motion.

The object of my invention is to provide means for giving one portion of the animal, for instance, the head, one movement, and giving a portion of the head, for instance, the ears, a separate movement independent of the movement of the head.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a perspective view of a mechanical toy constructed in accordance with my invention; Fig. 2 is a sectional side elevation through the toy, showing the clockwork and operating mechanism; Fig. 3 is a transverse section on the line 3—3 of Fig. 2; and Fig. 4 is a transverse section on the line 4—4 of Fig. 2.

The specific form of toy illustrated in the accompanying drawings, includes a body or casing 10, in imitation of a large egg, one end of which is broken away, and a head 11, representing the head of a rabbit and projecting from the broken end of the egg, although it is evident that the body portion 10 might represent the body of a rabbit or any other animal, and the head 11 be varied accordingly. The specific form illustrated is particularly appropriate for display or use as an Easter novelty. In this construction, the body or casing 10 is formed of papier-mâché or other similar or suitable material, and is secured to a base 12, to hold the body or casing in the desired position. The body has an opening at one end and the peripheral portion 13 of the opening is preferably irregular so that the egg looks as though it had been broken. The head of an animal, for

instance, a rabbit, is mounted within this opening and is movable in respect to the body. The head may be formed of papier-mâché or other suitable light material, and is preferably hollow to reduce the weight. To make a tight closure between the body and the head, and, at the same time, to permit the movement of the head, I provide a lining piece 14, of silk or other fabric, encircling the neck of the animal. The lining piece at its front edge is held to the neck by a gathering string or ribbon tied in a bow 15, and the rear edge of the lining piece is pasted to the inner surface of the body at a short distance from the periphery 13 of the opening. The lining piece is in imitation of the lining membrane of an egg. The neck portion of the animal extends back into the body and the upper portion constitutes a lever fulcrumed intermediate its ends. The head may be suspended from the upper side of the body or supported from the lower side, as desired, but preferably a standard 16 extends upwardly and terminates in a pivot pin 17 upon which the head is balanced. The head is universally fulcrumed on this pivot pin, that is, the head proper, which constitutes the front end of the lever, may move in a vertical plane or in a horizontal plane, or in any intermediate one. The head may also swing laterally as a pendulum below the fulcrum.

The portion of the head and neck extending along the upper medial line constitutes the lever and may be reinforced and rendered more rigid by a bar 18, the front end of which constitutes a bearing block for the pivot pin. The bar 18 may be considered the lever proper and the head may be considered as being secured to the front end of the lever. The rear end of the bar 18 has a pin 19 secured thereto in alinement therewith, and suitable clockwork engages with this pin to give the rear end of the lever a cyclic movement. The clockwork may be of any suitable character and the details thereof constitute no portion of my invention.

The clockwork preferably includes a frame 20 secured to an inner base block 21 within the body, and within the frame is a main spring 22 and a train of gears 23. To one of the train of gears is connected a fan governor 24 for controlling the speed of the clockwork motor, and to another one of the train is connected a disk 25 lying in a plane substan-

tially at right angles to the general direction of the lever or bar 18. The casing is provided with an aperture adjacent the clockwork, and through which a key may be extended to wind the spring whenever necessary. The clockwork is preferably so constructed that the key when inserted, comes in the path of the fan governor to prevent the latter from rotating. Thus, the key may be used as a means for stopping the motor and locking it against movement whenever desired. After winding the spring, the key may be withdrawn and the clockwork will immediately start in operation. The disk 25 is operatively connected to the pin 19; so that as the disk rotates, the rear end of the lever; that is, the pin, is moved along a circular path, or, in other words, given a cyclic movement. The disk preferably has secured to the face thereof, a plate 26, constituting an extension of the latter, and this extension has an aperture adjacent the end thereof and through which the pin 19 extends. It is not necessary that the upper end of the fulcrum 17 be exactly in the axis of rotation of the disk 25, as the pin 19 may slide through the aperture in the plate 26 and accommodate itself to any difference in distance between the fulcrum and the upper and lower edges of the disk, respectively. As the rear end of the lever is moved in a circular path by the clockwork and the portion of the lever adjacent the fulcrum is held substantially stationary, it is evident that the front portion of the lever, that is, the head proper, is moved in a circular path.

All of the head proper is disposed in front of the fulcrum 17, and thus there is a normal tendency for the lever to move upwardly at the rear end and downwardly at the forward end. The clockwork constituting the mechanical motor, thus not only does no work during the upward movement of the rear end of the lever, but the tendency toward an upward movement at this time, aids and assists the motor; so that this portion of the movement is at a comparatively rapid rate. During the downward movement of the rear end of the lever, the motor must not only move the head but must positively raise the heavier front end and the motor is thus retarded. The fan governor 24, of course tends to maintain the motor at a uniform rate, but the alternate aiding and retarding of the motor by the lever gives a very appreciable difference in the rate of movement during different portions of the cycle of movement. This gives a very life-like appearance to the movement of the head as it is raised slowly and lowered rather quickly.

The head is provided with upwardly-extending ears 27, movable in respect to the head and having a movement independent of the movement of said head. The ears are flexible at their bases 28, and each flexible

connection constitutes a hinge pin upon which the ear may be moved backwardly or forwardly. Within each ear is a lever 29, fulcrumed at the hinge or point 28 and terminating within the head. The two levers 29, 70 29, may be formed of a single piece of wire bent intermediate its ends and extending up through the wall of the head into the ears. The two levers at their lower ends are connected by a string, wire, cord, or other flexible connection 30 to the lever 18 adjacent the rear end thereof, and this string, wire, cord, or the like, extends through a stationary eyelet or ring 31 secured to the base block 21 and substantially in the vertical plane of the fulcrum 17 and the lever 18. This flexible connection hereinafter referred to as a "cord" being connected to the lever 18 and to the levers 29 and movable through the ring 31, tends to swing the ears backwardly and forwardly as the head is given its cyclic movement. As the rear end of the lever 18 rises to lower the head, the cord is pulled through the ring 31 and the levers 29 are moved backwardly at their rear ends to swing the ears 90 forwardly. Thus, the lowering of the head is accompanied by a raising of the ears, and the raising of the head is accompanied by a dropping of the ears. As the head is raised by the lowering of the rear end of the lever 18, the cord 30 is loosened and the ears are permitted to drop or slowly move backwardly and downwardly under the action of gravity.

The particular mechanism illustrated may be employed for moving other parts of the body than the head and ears, it only being essential that one part be given a cyclic or circular movement and the other part be carried by the first-mentioned part and be given a separate and distinct movement, as, for instance, a swinging movement.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A device of the class described, including a lever universally fulcrumed intermediate its ends, a head carried at one end of the lever, and means for moving the opposite end of the lever in a circular path. 110
2. A device of the class described, including a lever freely supported intermediate its ends, a head carried at one end, and a motor operatively connected to the opposite end and giving said head a cyclic movement. 115
3. A device of the class described, including a lever universally fulcrumed intermediate its ends, a head carried at one end, and operating mechanism connected to the other end. 120
4. A device of the class described, including a lever universally fulcrumed intermediate its ends, a head carried at one end, and operating mechanism connected to the other end, said operating mechanism including a rotatable disk disposed in a plane at substan- 125 130

tially right angles to the general direction of the lever and connected to the lever adjacent the periphery of the disk.

5 5. A device of the class described, including a lever pivoted intermediate its ends, a head connected to one end and having a movable part, operating mechanism connected to the other end, and means for moving said part in respect to the head during
10 the movement of the latter.

6. A device of the class described, including a lever pivoted intermediate its ends, a head connected to one end and having movable ears, operating mechanism connected to the other end of said lever, and means for moving said ears in respect to the head during
15 the movement of the latter.

7. A device of the class described, including a head having ears movable in respect thereto, and means for moving said head in a circular path and simultaneously swinging said ears in respect to the head.
20

8. A device of the class described, including a head having ears movable in respect thereto, and means for moving said head in a circular path and simultaneously swinging said ears backwardly and forwardly in respect to the head.
25

9. A device of the class described, including a lever pivoted intermediate its ends, a head carried by said lever at one end, operating mechanism connected to the lever at the
30

opposite end, ears carried by the head, levers connected to said ears, and means connecting said last-mentioned levers to the rear end of the first-mentioned lever. 35

10. A device of the class described, including a lever pivoted intermediate its ends, a head carried by said lever at one end, operating mechanism connected to the lever at the opposite end, ears carried by said head, levers connected to said ears, and means connecting said last-mentioned levers to the rear end of the first-mentioned lever, said connecting means comprising a flexible cord and a stationary ring through which said cord passes. 40 45

11. In a device of the class described, including a lever pivoted intermediate its ends, a second lever pivoted to the first-mentioned lever adjacent one end, operating mechanism connected to the first-mentioned lever, a cord connecting one end of the second-mentioned lever to the opposite end of the first-mentioned lever, and a stationary ring through which said cord passes intermediate its ends. 50 55

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES W. CLARK.

Witnesses:

FRANCIS J. GALLAGHER,
GEORGE W. GALLAGHER.