

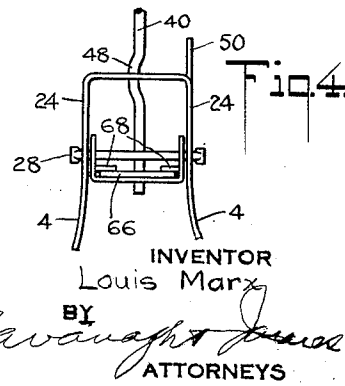
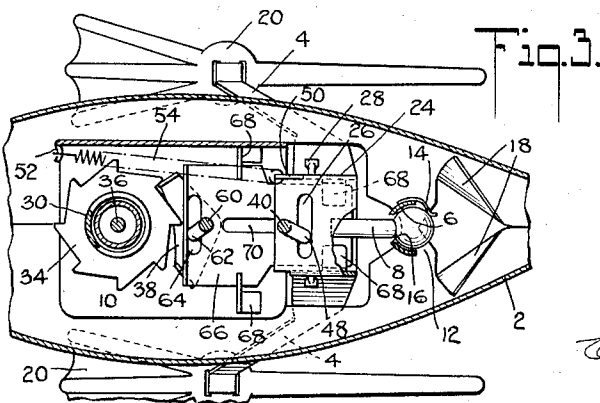
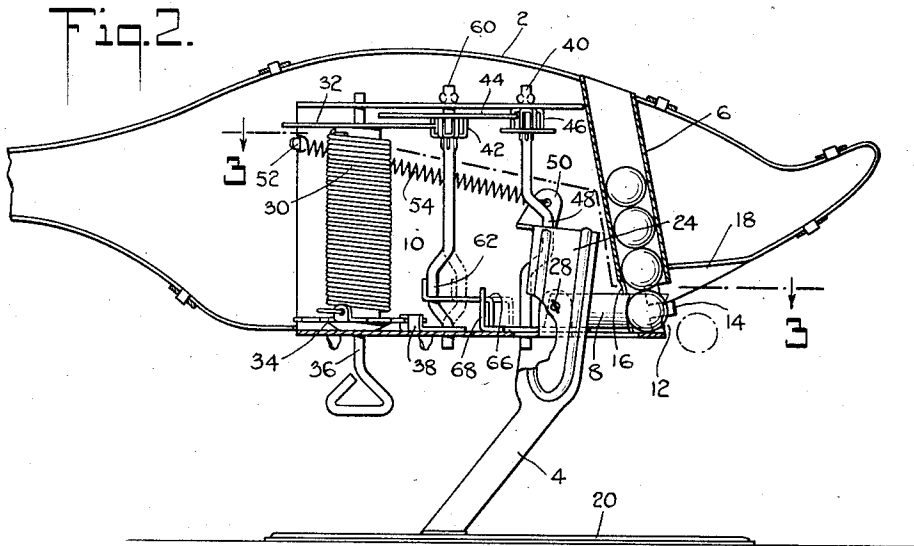
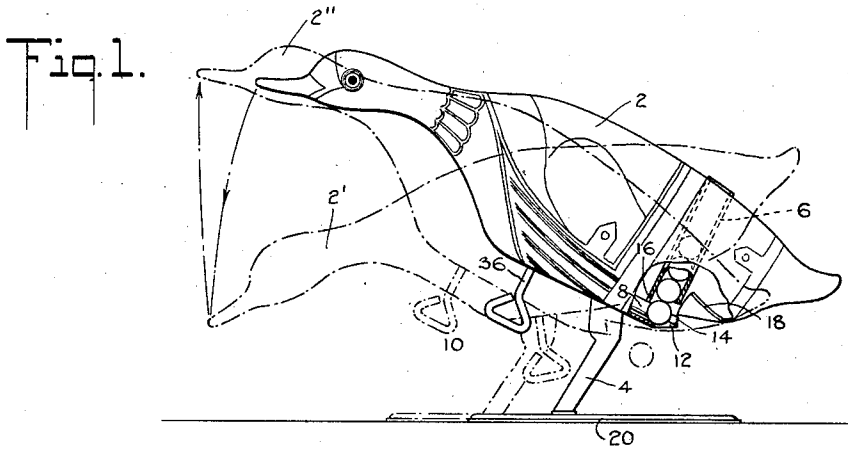
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L. MARX

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TOY

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UNITED STATES PATENT OFFICE

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TOY

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This invention relates to toys and more particularly to a toy fowl arranged to lay eggs.

The primary object of my invention resides in the provision of a toy fowl which simulates the laying of an egg by the fowl. A further object of the invention is to arrange for the laying of a plurality of eggs singly, successively, and at appropriately spaced intervals of time.

In U. S. Patent No. 1,500,590, issued July 8, 1924, I have described a toy fowl so arranged that the body thereof oscillates about the leg members in a manner resembling pecking or food seeking. The said toy is also so arranged that the upward oscillation is much more rapid than the downward oscillation, which causes the toy to be propelled along the supporting surface on which it is resting. One object of the present invention is to improve and to simplify the mechanism of such a toy. A further object of this invention is to provide such a toy with egg laying apparatus of the nature already mentioned. A still further object of the invention is to so arrange the body oscillating mechanism and the egg laying apparatus that both may be operated from a single driving motor. Still another object of the present invention is to so relate the egg laying operation to the body oscillating movement that the latter occurs much more frequently than the former, that is to say, the interval of time between the laying of successive eggs is considerably greater than the period of the pecking movement.

To the accomplishment of the foregoing and such other objects as will hereinafter appear, my invention consists in the elements of the toy and their relation one to the other, as hereinafter are more particularly described and sought to be defined in the claims; reference being had to the accompanying drawings which show a preferred embodiment of my invention, and in which:

Fig. 1 is a side elevation of the toy in successive positions, showing the pecking and propulsive movements thereof;

Fig. 2 is an enlarged vertical section taken longitudinally through the toy;

Fig. 3 is a horizontal section taken in the plane of the line 3—3 in Fig. 2; and

Fig. 4 is a detail of the motor mechanism.

Referring to the drawings, and more particularly to Fig. 1 thereof, it will be seen that a toy fowl, constructed in accordance with a preferred form of my invention, comprises a body 2, oscillatably mounted on leg members 4, and provided with an egg storage magazine 6 and release or ejector mechanism 8 therefor, and a driving motor 10 arranged to oscillate the body 2 about the leg members 4 and to cause ejection of the eggs from the magazine and out of the body of the toy.

The toy fowl includes a compartment, 6, for holding an egg and means, 8, for causing the release of the egg from the compartment so that the fowl seems to lay the egg. The compartment, 6, may be loaded with a number of eggs, in which case they preferably are discharged singly, successively, and at spaced intervals of time of relatively long duration, in order to increase the realism of the performance.

Examining the toy more closely it will be seen that it has been exemplified in the present instance by a goose, the body 2 being suitably shaped and decorated to resemble this species of egg laying fowl. The body includes a magazine 6, preferably in the form of an upright cylinder in which one or more toy eggs may be carried in vertically superposed relation. There is an opening for the insertion of eggs into the top of the magazine, and a discharge opening at the bottom of the magazine, preferably formed by cutting away the rear half of the magazine adjacent its closed lower end, as is shown at 12 in Figs. 1, 2, and 3. The lowermost egg in

the magazine cannot pass therethru because of the restraining influence of a resilient retainer or light spring member 14, positioned in the path of egress of the egg, and, of course, the remainder of the eggs are held by the lowermost egg.

A slot 16 is cut through the forward portion of the magazine near its bottom, and a reciprocable plunger or ejector 8 reciprocates transversely of the magazine through the slot 16, thereby pressing the lowermost egg in the magazine past the retainer 14 and thence out of the body of the fowl. The sheet metal sides of the body are bent in at 18, just in back of the discharge opening of the magazine, in order to permit release of the egg from the body of the toy.

It is apparent that an egg placed in the magazine 6 is there held until the ejector plunger 8 is reciprocated across the bottom of the magazine, when it is ejected from the magazine and seems to be laid by the fowl. Even if the magazine is loaded with a plurality of eggs the reciprocation of the ejector plunger 8 causes them to be laid singly, for as the plunger forces the lowermost egg past the retaining spring 14 it prevents the remainder of the eggs from dropping down to the bottom of the magazine until the plunger is fully retracted therefrom. The eggs are therefore laid at spaced intervals of time corresponding to the frequency with which the plunger 8 is reciprocated.

The drive mechanism which I prefer to employ for the ejector plunger is so closely interrelated with the driving means for causing the bodily oscillation and propulsion of the toy that these mechanisms may best be described together, although it will be appreciated that a toy embodying the egg laying property may be constructed without being simultaneously designed for the pecking action.

The body 2 is supported on leg members 4, the lower ends of which are fixed to enlarged feet 20, which rest on a supporting surface. Referring particularly to Fig. 1 of the drawing, if the body 2 is oscillated slowly about the leg members 4 it will assume the positions 2 and 2' alternately. However, in accordance with my invention the upward oscillation is made quite rapid, smart, and forceful, compared to the downward oscillation, which causes the toy to move forward to the position 2'', and so successive oscillations cause the toy to progress along the supporting surface in a realistic manner. Such a propulsive movement is disclosed in my earlier patent already referred to, but the mechanical means for obtaining the desired oscillation and travel have been simplified and improved herein, and therefore will be described at greater length.

Referring to Figs. 2, 3, and 4, the leg

members 4 have at their upper ends a relatively rigid extension 24 carrying an integral yoke in which a transverse horizontal slot 26 is provided. The body 2 is pivoted to and oscillatably supported on the leg members 4 by a spindle 28, and this spindle is so located that the extension 24 and slot 26 are located and concealed within the body of the toy. The body 2 also carries a motor 10, here illustrated as a spring motor having a torsional drive spring 30, one end of which is applied to a main drive gear 32, and the other end of which is connected to a ratchet wheel 34 fixed to a winding shaft and key 36. The winding ratchet 34 is held against the spring torque by a compound pawl or detent 38.

The motor 10 includes a crank shaft 40 which is rotated by the driving gear 32 through suitable step-up gearing including in this instance the pinion 42, the gear 44, and the pinion 46. The crank pin 48 of the crank shaft is made relatively long and passes through the slot 26 at the top of the extension 24 of the leg members 4. Upon rotation of the crank shaft 40 the transverse component of the crank movement is lost in the slot 26, but the longitudinal component causes the position of the body 2 relative to the leg members 4 to vary, and so causes the body to oscillate vertically about the leg members. The consequent axial movement of the crank shaft 40 relative to the extension 24 is permitted by reciprocation of the elongated crank pin 48 in the slot 26.

In order to cause the toy to travel along its supporting surface resilient means are arranged to oppose the downward oscillation and to assist the upward oscillation of the toy. In the present case a lug 50 is provided at the top of the leg member extension 24, and between this lug and a forward point in the body of the toy, such as the point 52 on the motor frame, there is stretched a tension spring 54. This tends to keep the body in raised position, and opposes the downward oscillation thereof, but serves to assist and accelerate the upward oscillation thereof, and thereby causes the desired propulsion of the toy, in the manner illustrated by the successive positions 2, 2', and 2'' thereof shown in Fig. 1 of the drawing.

It has already been suggested that the egg laying operation should preferably take place at spaced intervals of time considerably longer in duration than the period of oscillation of the toy. A motor mechanism particularly applicable to this purpose is here disclosed, and comprises an intermediate crank shaft 60, which, owing to its location in the gear train of the driving motor, is rotated at a much slower rate than the final crank shaft 40 which serves to oscillate the body of the toy. The crank pin 62 of the crank shaft 60 is confined within a transverse slot 64 in a longitudinally reciprocable

member 66, guided in supports 68. This sliding member 66 lies for the most part along the bottom of the motor frame, but is raised at the portion carrying the slot 64 in order to bring the slot at the same level as the crank pin 62, which necessarily is above the bottom of the motor frame because the latter constitutes one of the main bearings of the crank shaft 60. The slide 66 is provided with a longitudinal slot 70 in which the final crank shaft 40 is located, thereby permitting reciprocation of the slide 66 even though the latter extends toward the rear of the toy beyond the crank shaft 40.

At the rear of the slide 66 is fixed the ejector plunger 8, so that rotation of the crank shaft 60 causes reciprocation of the plunger 8, and thus causes ejection of eggs from the magazine and out of the body of the fowl in the manner previously outlined. Because of the great difference in the rotational speeds of the crank shafts 40 and 60 the eggs are laid at the desired relatively slow rate.

From the foregoing description it will be appreciated that I have provided an egg laying toy, a pecking toy, and a self-propelling toy. Obviously, the egg laying toy and mechanism therefor may be used independently of the improved pecking and propulsive mechanism set forth, and vice versa. In combining both mechanisms I have arranged the time sequence to improve the realism of operation by increasing the interval of time between the laying of successive eggs, relative to the period of oscillation, and in spite of meeting this requirement I have employed a minimum of parts in the combined toy.

It will be apparent that while I have shown and described my invention in a preferred form, many changes and modifications may be made in the structure disclosed without departing from the spirit of the invention, defined in the following claims.

I claim:—

1. A readily movable toy fowl comprising a storage magazine for holding toy eggs, a spring driven motor in said fowl, and means driven thereby for causing the successive and single ejection of the eggs from the magazine at spaced intervals of time, in representation of the laying of eggs by the fowl.

2. A readily movable toy fowl comprising a body formed in representation of a fowl, legs supporting said body, a storage magazine for holding an egg within the body of the fowl, a spring driven motor mounted within the body of the fowl, and ejector mechanism actuated by the motor for ejecting the egg from the magazine and out of the rear portion of the body of the fowl to simulate laying of the egg.

3. A toy fowl comprising a body formed in representation of a fowl, a storage magazine for holding a toy egg within the body of the fowl, a motor mounted within the body of the fowl, resilient retaining means interposed in the path of the egg from the magazine, and a reciprocable plunger actuated by the motor for forcing the egg downwardly past the retaining means and out of the body so that the fowl seems to lay the egg.

4. A toy fowl comprising a body formed in representation of a fowl, a storage magazine for holding a supply of toy eggs within the body of the fowl, a motor mounted within the body of the fowl, resilient retaining means interposed in the path of the eggs from the magazine, and a reciprocable plunger actuated by the motor for singly and successively ejecting the eggs at spaced intervals of time from the magazine downwardly past the retaining means and out of the body so that the fowl seems to lay the eggs.

5. A toy fowl comprising a body formed in representation of a fowl, a vertical storage magazine for holding a supply of toy eggs in superposed relation within the body of the fowl, an opening for the insertion of eggs into the top of the magazine, a discharge opening in the side near the bottom of the magazine, a light spring retainer interposed in the path of the eggs from the magazine, a spring driven motor mounted within the body of the fowl, and a transversely reciprocable plunger actuated by the motor for singly and successively pressing upon and forcing the then lowermost egg from the magazine past the retainer and out of the body, so that the fowl seems to lay the eggs.

6. A toy fowl comprising a body formed in representation of a fowl, means on which said body is mounted for movement along a supporting surface, a motor within the body, a storage magazine for holding an egg within the body, release mechanism therefor, and means coupling the motor to the said means and to the release mechanism for causing the body to move along the supporting surface and the fowl to lay the egg.

7. A toy fowl comprising a body formed in representation of a fowl, a plurality of leg members on which said body is movably mounted, a motor within the body, a storage magazine for holding an egg within the body, release mechanism therefor, and means coupling the motor to the leg members and to the release mechanism for causing the body to move and the fowl to lay the egg.

8. A toy fowl comprising a body formed in representation of a fowl, a plurality of leg members on which said body is oscillatably mounted, a motor within the body, a storage magazine for holding toy eggs within the body, release mechanism therefor, and means coupling the motor to the leg members and to

the release mechanism for causing the body to oscillate relative to the leg members and for causing the fowl to singly and successively lay the eggs.

9. A toy fowl comprising a body formed in representation of a fowl, a plurality of leg members on which said body is oscillatably mounted, a spring driven motor within the body, a vertical storage magazine for holding toy eggs in superposed relation within the body, an opening for the insertion of eggs into the top of the magazine, release mechanism at the bottom of the magazine, and means coupling the motor to the leg members and to the release mechanism for causing the body to oscillate relative to the leg members and for causing the fowl to singly and successively lay the eggs.

10. A toy fowl comprising a body, leg members on which the body is movably mounted, a motor mounted within the body and having a main drive shaft and a pair of crank shafts geared thereto, a magazine within the body for holding a supply of toy eggs, ejector means for releasing the eggs from the magazine, means coupling one of the crank shafts to the leg members in order to cause movement of the body, and means coupling the other crank shaft to the ejector means in order to eject eggs from the magazine.

11. A toy fowl comprising a body, leg members on which the body is mounted for oscillating movement, a motor mounted within the body member and having a main drive shaft, an intermediate crank shaft, and a final crank shaft all geared in increasing step-up ratio, a magazine within the body for holding a supply of toy eggs, ejector means for releasing the eggs from the magazine, means coupling the final crank shaft to the leg members in order to cause oscillation of the body of the fowl, and means coupling the intermediate crank shaft to the ejector means in order to eject eggs from the magazine at intervals of time greater than the period of the oscillation of the body.

12. A toy fowl comprising a body, leg members on which the body is mounted for downward oscillating movement, a spring tending to keep the body in upward position, a motor mounted within the body and having a main drive shaft, an intermediate crank shaft, and a final crank shaft all geared in increasing step-up ratio, a magazine within the body for holding a supply of toy eggs, ejector means for releasing the eggs singly from the magazine, means coupling the final crank shaft to the leg members in order to cause in co-operation with the spring a slow downward and rapid upward pecking action of the fowl accompanied by propulsion along its supporting surface, and means coupling the intermediate crank shaft to the ejector means in order to eject eggs from the maga-

zine at intervals of time greater than the period of the pecking action.

13. A toy fowl comprising a body, leg members on which the body is mounted for oscillating movement, a spring driven motor mounted within the body member and having a main drive shaft, an intermediate crank shaft, and a final crank shaft all geared in increasing step-up ratio, a vertical magazine within the body for holding a supply of toy eggs in superposed relation, and opening for the insertion of eggs into the magazine, ejector means for releasing the eggs from the bottom of the magazine, means coupling the final crank shaft to the leg members in order to cause oscillation of the body of the fowl, and means coupling the intermediate crank shaft to the ejector means in order to eject eggs from the magazine at intervals of time greater than the period of the oscillation of the body.

14. A toy fowl comprising a body, leg members having elongated foot portions at their lower ends and a rigid extension including a horizontal transverse slot at their upper ends, means for so mounting the body oscillatably on the leg portions that the extension and slot are located inside of the body, and a spring motor unit including a drive shaft, an upright crank shaft, and suitable step-up gearing therebetween, fixed within the body, the crank pin of said crank shaft being relatively long and located within the aforementioned slot, whereby rotation of the crank causes vertical oscillation of the body.

15. A toy fowl comprising a body, leg members having elongated foot portions at their lower ends and a rigid extension including a horizontal transverse slot at their upper ends, means for so mounting the body oscillatably on the leg portions that the extension and slot are located inside of the body, a spring motor unit including a drive shaft, an upright crank shaft, and suitable step-up gearing therebetween, fixed within the body, the crank pin of said crank shaft being relatively long and located within the aforementioned slot, whereby rotation of the crank causes vertical oscillation of the body on the leg members, and resilient means arranged to cause the resulting pecking action to take place slowly in a downward direction and rapidly in an upward direction.

16. A toy fowl comprising a body, leg members having elongated foot portions at their lower ends and a rigid extension including a horizontal transverse slot at their upper ends, means for so mounting the body oscillatably on the leg portions that the extension and slot are located inside of the body, a spring motor unit including a drive shaft, an upright crank shaft, and suitable step-up gearing therebetween, fixed within the body, the crank pin of said crank shaft

being relatively long and located within the
aforementioned slot, whereby rotation of the
crank causes vertical oscillation of the body
on the leg members, and a tension spring con-
5 nected between the upward extension of the
leg members and a forward portion of the
body in order to cause the oscillation to take
place slowly in a downward direction and
rapidly in an upward direction, whereby the
10 resulting pecking action causes a forward
propulsion of the fowl along the supporting
surface on which it is resting.

Signed at New York, in the county of New
York and State of New York.

15 LOUIS MARX.

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