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L. E. HANSEN

2,425,429

FIGURE TOY

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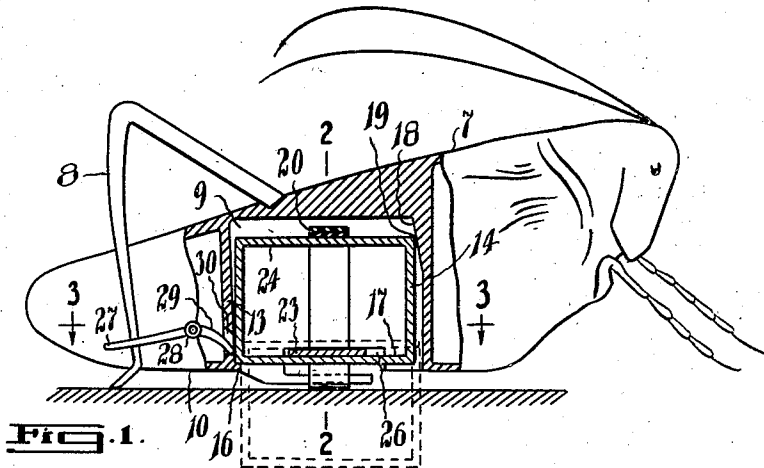


FIG. 1.

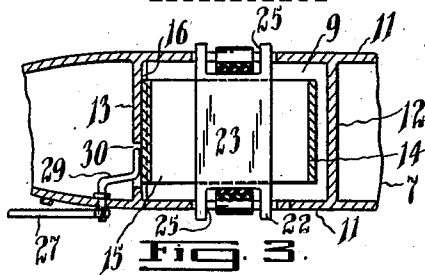


FIG. 3.

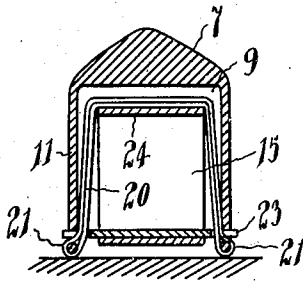


FIG. 2.

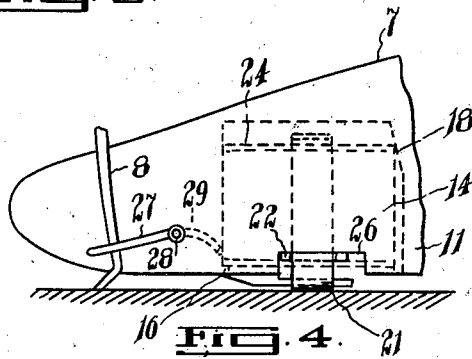


FIG. 4.

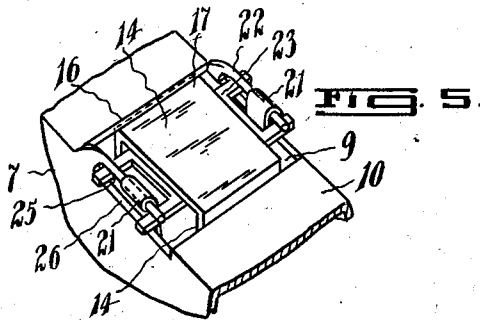


FIG. 5.

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FIGURE TOY

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12 Claims. (Cl. 46—145)

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My invention appertains to animated toys made up to resemble an insect or animal and has particular reference to a toy in the figure of a grasshopper.

Primarily the aim of the invention is the provision of a novel and entertaining toy adapted to rest upon a supporting surface and having a resiliently projected plunger arranged to be manually released for forcibly contacting the supporting surface in order to cause the toy to jump or leap in simulation of life-like action.

Preferably the toy is in the form of a grasshopper and the invention has as a further object the provision of a plunger mechanism in which the motivating agent is supplied by an elastic element applied in a simple and effective manner to outwardly project the plunger with a force sufficient to raise the toy bodily from a supporting surface.

A further object resides in the novel means for limiting outward movement of the plunger, and still another object resides in the provision of detent means for constraining the plunger against the action of the elastic element and providing for its release by a trip device.

These and other objects are attained by the selected form of the invention illustrated in the accompanying drawing, in which:

Fig. 1 is a side elevation of the figure toy partly in section.

Fig. 2 is a cross section on line 2—2 of Fig. 1.

Fig. 3 is a horizontal section on line 3—3 of Fig. 1.

Fig. 4 is a fragmentary side view of the toy.

Fig. 5 is a perspective detail of the toy viewed from its under side and showing the assembly of the mechanism to better advantage.

In carrying out the invention I provide a body, generally denoted at 7, made up in the figure of a grasshopper of which the legs 8 support it upon a surface such as that of a floor or table and for this purpose are made rigid as by constructing them integrally with the body.

The body is a hollow member and is formed of a mouldable material, such as a plastic substance, to supply a chamber 9 which extends upwardly from the bottom surface 10 so as to provide an opening opposite to and in close proximity to the sustaining surface upon which the toy is placed. The chamber is preferably of a rectangular cross section as will be best discernible from an inspection of Fig. 3. It is defined by the side walls 11 and the partitioning walls 12 and 13.

The chamber accommodates a plunger 14 of a like configuration thereto which fits entirely within the same and has a substantial transverse opening 15. The plunger is loosely arranged in the chamber for downward projection to contact the surface which supports the body, and it is spaced slightly from the partitioning walls 12 and

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13 in order that it may be tilted in said chamber in a plane longitudinally of the body 7, as shown in Fig. 1. This tilting movement is utilized to retain the plunger in set position within the chamber and to this end there is formed at the lower end of the rear wall 13 an inwardly projecting lip 16 which is engaged by the outer face of the bottom member 17 of the plunger. The lip forms a detent for latching engagement with the plunger and it will be readily understandable that in order to retain the plunger in the chamber it is only necessary to urge its lower end rearwardly into seating engagement with said lip. To aid in making the engagement it is desirable to provide an inwardly and upwardly sloping face 18 at the inner end of the front wall for engagement with the top frontal corner 19 of the plunger whereby to shift the plunger rearwardly as it is being pressed into the chamber against the action of the tensioning agent.

The tensioning agent is an elastic band 20 having companion strands encompassing the opposite sides and the top of the plunger with end loops 21 fitted over prongs 22 longitudinally disposed on the side walls 11 at the mouth of the chamber. The elastic element is tensioned by pressing the plunger in the chamber.

To limit outward travel of the plunger there is supplied a bridge or stop piece 23 extending transversely through the body 7 and disposed in the aperture 15 of the plunger so as to abut the top member 24 thereof.

The ends of the stop piece are supplied with slots 25 to permit the elastic element to pass therethrough and these bifurcated ends are lodged in openings 26 immediately above the prongs 22, the openings being formed in the side walls 11. This interfitting connection not only enables the stop piece to prevent the loop ends of the elastic element from becoming inadvertently detached from the prongs, but also functions to provide a structure in which the strands of the elastic element retain the stop piece in place.

From the preceding description it will be clear that the structure provides a plunger which is adapted to be pressed into the chamber by hand and retained therein against the force of the elastic element by means of the lip in order that when released it will be projected outwardly to cause the body to have a jumping action.

The release of the plunger is preferably achieved by a hand lever 27 pivoted at 28 on the side of the body and supplied with an arm 29 curved downwardly and operable in an aperture 30 in the wall 13 for disengaging the plunger from the lip 16. To release the plunger it is only necessary to put one's finger on the lever and press it down.

It will be manifest that the invention provides

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a novel and entertaining toy which can be made at low cost using a plastic material for all parts with the exception, of course, of the elastic agent; and that the structure provides for ready assembly of the parts. The invention is obviously not restricted to a figure toy in the form of a grasshopper, and such changes in structure and form may be resorted to as come within the sub-joined claims.

What I claim is:

1. In a figure toy, a body adapted to rest upon a supporting surface, a plunger therein arranged to be downwardly expelled for forcibly contacting the supporting surface to cause the body to rise abruptly therefrom, resilient projectile means for the plunger means for retaining the plunger in the body, and a manually operable device for releasing the plunger.

2. In a figure toy, a body adapted to rest upon a supporting surface, a plunger slidably contained therein for downward movement into contact with the supporting surface aforesaid, resilient means for achieving such movement of the plunger, a detent for constraining the plunger against the effort of the resilient means, and a trip device for releasing the plunger from the detent.

3. In a figure toy, a body adapted to rest upon a supporting surface, said body provided with a chamber open to the bottom thereof and formed in part by side walls, a plunger loosely fitted in the chamber for downward movement into contact with the supporting surface aforesaid, an elastic element attached to said side walls and extended over the plunger to urge it outwardly of the chamber, means for retaining the plunger in the chamber, and manual means for effecting its release.

4. In a figure toy, a body adapted to rest upon a supporting surface, said body provided with a chamber extending inwardly and upwardly from the bottom thereof, a plunger vertically slidable therein, an elastic band providing companion strands with loop ends, said strands being arranged about opposite sides and the top part of the plunger, prongs carried by the bottom portion of the body and engaged by said loop ends whereby the elastic band is tensioned when the plunger is pressed into the chamber, means for retaining the plunger in the chamber against the tension of the elastic band, and manual means for effecting its release so that it may forcibly strike said supporting surface in order to elevate the body.

5. A figure toy as defined in claim 4, in which means are provided to retain the loop ends of the elastic band on the prongs.

6. A figure toy as defined in claim 4, in which means are provided to limit movement of the plunger outwardly of the chamber, and in which said means is mounted in the body in a manner to retain the loop ends of the elastic band on the prongs.

7. In a figure toy, a body adapted to rest upon a supporting surface, said body provided with a chamber extending inwardly and upwardly from the bottom thereof, a plunger vertically slidable therein, said plunger having a transverse aperture, a transverse member extending through said aperture for limiting outward travel of the plunger and connected to the body, the transverse member having slots at the sides of the plunger,

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an elastic element encompassing the sides and top portions of the plunger and having end parts inserted through said slots of the transverse member and detachably connected to the body, means for retaining the plunger within the chamber, and manual means for effecting its release.

8. In a figure toy, a body adapted to rest upon a supporting surface, said body provided with a chamber extending inwardly and upwardly from the bottom thereof, a plunger vertically slidable therein, said plunger having a transverse aperture, a transverse member extending through said aperture and connected to the body for limiting outward travel of the plunger, the transverse member having slots at the sides of the plunger, an elastic band providing companion strands with loop ends, said strands being arranged about the sides and top portion of the plunger and having the loop ends inserted through said slots of the transverse member, prongs carried by the body and disposed below the transverse member and engaged by said loop ends whereby the elastic band is tensioned when the plunger is pressed into the chamber, means for retaining the plunger in the chamber against the tension of the elastic band, and manual means for effecting its release so that it will impinge said supporting surface in order to cause the body to have a jumping action.

9. A structure as defined in claim 8, in which the slots of the transverse member extend inwardly from the ends thereof and these ends form bifurcated elements which straddle the loop ends of the elastic element and are fitted in apertures in the body.

10. In a figure toy having a chambered body fitted with a releasable plunger for outward projection, means for projecting the plunger and limiting its outward travel, said means comprising an elastic band providing companion strands with end loops, the end loops being engaged over prongs provided on said body at opposite sides of the chamber thereof and the strands being extended about the plunger for urging it outwardly of the chamber, and a bridge extending across the chamber for abutting the plunger in its outward travel, said bridge having slotted ends detachably fitted in the body and straddling the strands of the elastic element whereby the assembly of the elastic element and the bridge is retained.

11. In a figure toy, a body provided with a rectangular chamber having an inner end and an outer end, a plunger loosely fitted in the chamber to have a limited lateral movement between front and rear walls thereof, a lip protruding inwardly of either said front or said rear wall and disposed at the outer end of the chamber, said lip forming a detent having seating engagement with the plunger to retain it in the chamber, an inclined surface provided on the opposing wall at the inner end of the chamber, said inclined surface arranged to guide the plunger in the direction of said lip as the plunger is pressed into the chamber, resilient means for outwardly urging the plunger, and a trip device for urging the plunger away from said lip whereby to release it for operational movement.

12. A figure toy as defined in claim 11, in which the trip device comprises a hand lever pivoted on the body and provided with an arm for urging the plunger away from the lip.

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