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J. H. LEMELSON
SOUNDING JUMPING TOY

2,885,824

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FIG. 1.

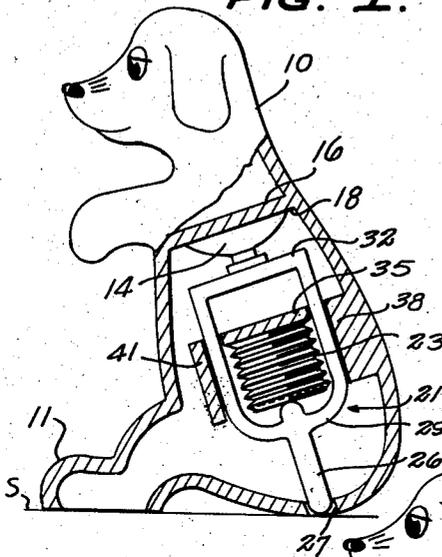


FIG. 2.

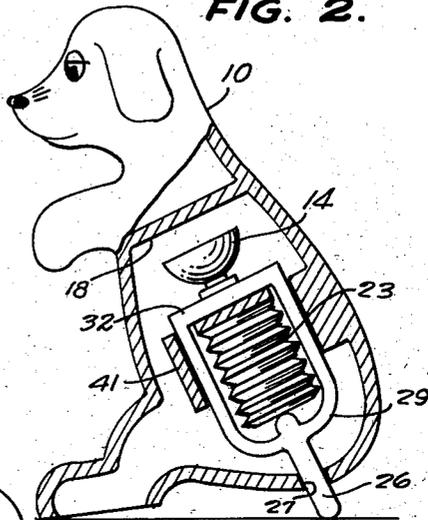


FIG. 4.

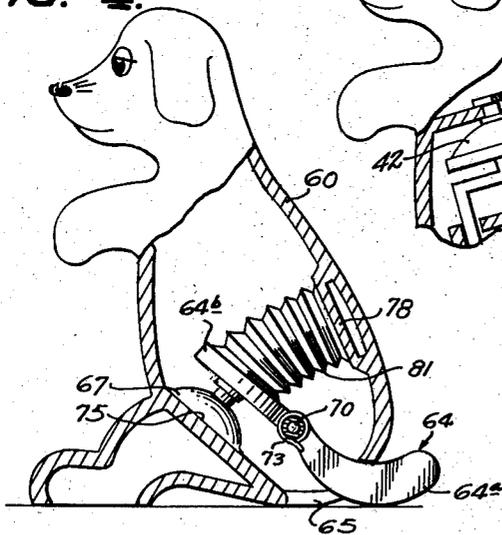


FIG. 3.

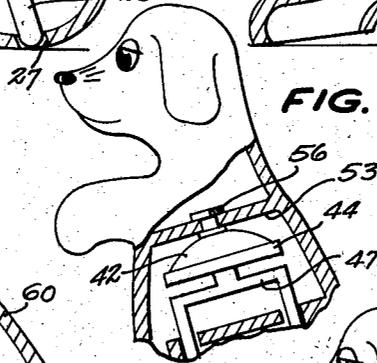


FIG. 5.

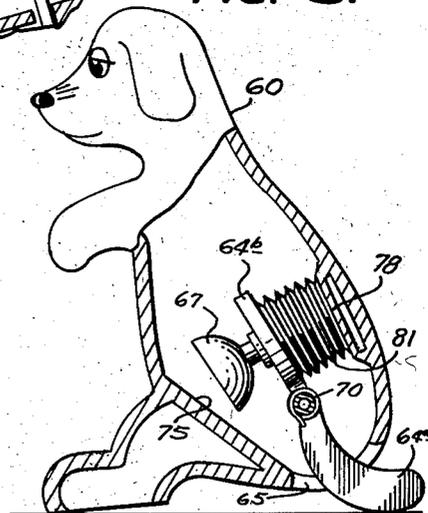
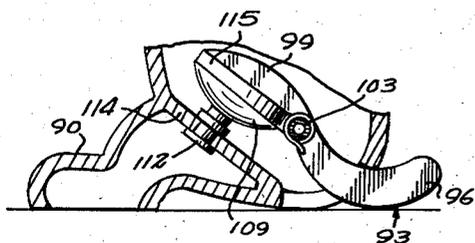


FIG. 6.



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1

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SOUNDING JUMPING TOY

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13 Claims. (Cl. 46-118)

This invention relates to action toys and in particular to mechanical toys which operate by means of a delayed action.

It is a primary object of this invention to provide new and improved action toys in which a mechanical movement occurs to actuate said toys a delayed time period after a mechanism associated with said toys has been set or cocked.

Another object is to provide a new and improved delayed action toy which produces a sound at a delayed time period after said toy has been set or cocked, thereby enhancing the play and amusement value of said toy.

Still another object is to provide a new and improved delayed action movement toy which provides a sound at substantially the same time said toy effects a movement from an at rest position to a further position, thereby enhancing the surprise effect attained by virtue of the movement of said toy.

Still another object is to provide an improved delayed action toy which is easy to preset and is adaptable for use in a variety of different mechanisms.

Yet another object is to provide an improved structure in delayed action toys which is easy to assemble and positive in its action.

To the attainment of the objects and advantages referred to, the present invention consists in the novel features of construction, arrangements, design and details hereinafter described or illustrated in the accompanying drawings wherein:

Fig. 1 shows a longitudinal cross section of a mock animal representing a dog and shows details of a delayed action release mechanism mounted within the body of said dog.

Fig. 2 is similar to Fig. 1, but shows the dog in a position after the release of the delayed action mechanism of Fig. 1.

Fig. 3 is a fragmentary view in partial cross section of a modification of the invention.

Fig. 4 is a partially cross sectional, longitudinal view of a mock dog in a sitting position and shows a modified delayed action mechanism mounted therein.

Fig. 5 is similar to Fig. 4, with the mechanism thereof in a released position; and

Fig. 6 shows fragmentarily a further modification of the mechanism of Figs. 4 and 5.

In Fig. 1, a hollow body dog figure 10 having forward support portions 11 is provided and is adapted, when in the general attitude shown, to stand erect on a support surface S when a delayed action mechanism mounted therein is in a cocked position. The delayed action mechanism comprises an assembly including the combination of a rubber suction cup 14 and a partition 16 having a smooth surface 18. The partition is secured to or integral with the body 10.

A mechanism for urging the suction cup away from surface 18 is provided comprising a member 21 which serves as a mount for said suction cup and as an actuator means for both moving said toy and creating a noise

2

by compressing a bellows noisemaker 23 of a conventional type having an internal spring (not shown). Release of the spring from a compressed condition permits the bellows to suddenly expand to effect a noise and simultaneous motion of the toy.

The member 21 is shaped with a rod portion 26 at the lower end thereof simulating a dog tail, which extends through body aperture 27 and is integral with a yoke portion 29 having side arms joined by an end portion 32 which circumscribe the bellows 23. The bellows is secured to a shelf portion 35 which projects from and is integral with the toy figure body so that when rod portion 29 is pushed upwardly into the body through aperture 27, the bellows will be compressed against shelf 35 as shown (Fig. 1) and the coil spring therein will be compressed. However, the suction cup 14 at this time clings to surface 18, having been pushed thereagainst by the inward movement of rod 26. Thus, a delay period is effected until the action of the spring in bellows 23 causes the suction cup to release.

Interior projecting portions 38 and 41 of the toy body provide slide-bearing support for the arms of yoke portion 29 and, together with the aperture 27, serve to guide rod 26 in a predetermined lineal path, assuring a positive action and simplifying the task of cocking or setting the toy for delayed action movement and operation.

In Fig. 2, the suction cup 14 is shown after its release from the surface 18 by the release action of the compressed spring in the bellows 23. The frame 21 is thus suddenly urged downward and the protruding actuator rod portion 26 thereof reacts against the support surface S, suddenly lifting the rear of the body off said surface in a pivoting action about the leg portion 11. Simultaneously with this action, the expanding bellows creates a noise as air rushes in through the conventional vibrating reed noisemaker of the bellows sounder.

The toy may be reset or cocked once more by pushing down on the dog head and engaging the protruding rod 26 against the surface S with sufficient force to cause the suction cup to engage and be compressed against the surface of shelf 18 whereby it is held thereon until the spring in the bellows removes it therefrom as air leaks into the cup.

The modified construction illustrated in Fig. 3 provides a suction cup secured to an internal shelf portion of the toy shell, occupying approximately the position of the shelf of Figs. 1 and 2 and preferably formed integral with the walls of the shell. The cup 42 is adapted to engage a flat surface of a plate or shelf 44 secured to or formed integral with a yoke frame 47 similar in shape and function to the frame 29 of Figs. 1 and 2. The neck of the suction cup passes through an opening in the shelf 53 and an expanded portion 56 of the neck projects beyond the surface of the shelf and secures the suction cup to the shelf. Thus, when the body 10 is pushed downward, the surface of shelf 44 is forced against the suction cup and the latter is compressed thereagainst to remove the air therefrom. The shelf and frame assembly is held in said cocked position with the spring in the bellows noisemaker compressed until the cup loses its vacuum, after which the described release action occurs and the toy receives a jumping or hopping impetus and a noise is produced by the bellows.

Figs. 4 and 5 illustrate another modified form of the toy shown in Figs. 1 to 3 wherein the lineal motion of the suction cup and the mount is replaced by a pivotal action. The toy has a housing 60 simulating a dog body. The actuating mechanism comprises an actuator assembly 64, having an element 64a shaped to represent the tail of the dog and a rigid support 64b for the suction cup 67, which member 64a protrudes through

3

aperture 65. The actuator assembly 64 is pivotally mounted to rotate about an axis extending laterally across the body, as by a pin 70 which is carried in bores in body 60. A spiral or coil spring 73 is mounted on the pin and is adapted as a result of the engagement of one of its ends with the pin 26 and the other end being engaged with the actuator 64a, to urge the latter in a clockwise direction around pin 26. Thus, the suction cup is urged away from the surface of a flat wall portion 75 of the shell of the toy, near the lower front part of the body.

Disposed between the suction cup mounting portion 64b of the actuator and a portion 78 of the hind wall of the shell is a bellows noisemaker 81 adapted to emit a noise upon compression of the bellows caused by action of spring 70. Thus, when cup 67 releases, noise will suddenly be emitted as the bellows is compressed, which will occur as the toy jumps upward under impetus of clockwise rotation of tail portion 64a as effected by spring 70.

In the modification shown in Fig. 6, the body 90 is substantially similar to that shown in Figs. 4 and 5. The actuator 93 has a tail portion 96 protruding from the body and an inner portion 99 integral with the tail portion within the body. The actuator is carried on the pin 103 and will be understood to be spring-biased in a clockwise direction, all as heretofore described in conjunction with Fig. 4. In this instance, however, a suction cup 109 is provided which is secured to the body as by an enlarged button 112 carried in a partition 114. The suction cup is arranged for clinging engagement to the surface of a shelf 115 which may be integral with the actuator component 99. In this modification, a noisemaker is not used; otherwise, the action of the toy is substantially the same as heretofore described in conjunction with Fig. 4, as will be readily understood.

Having thus described my invention, I am aware that various changes may be made without departing from the spirit thereof, and accordingly, I do not seek to be limited to the precise illustration herein given except as set forth in the appended claims.

I claim:

1. An action toy comprising a hollow casing, a rigid actuator movably mounted within said casing and having a rigid extension which protrudes outwardly of said casing and which is adapted to bear against the support for said toy when in a cocked position, a suction cup mounted on said toy actuator mounted within said casing and hidden from view and adapted to be operatively engaged with said casing for cocking of said actuator, spring means coupling said actuator and said casing and adapted to be tensioned by cocking said actuator, said spring means being adapted to automatically move said actuator in a fixed path relative to said casing and guided thereby to a release position upon loss of vacuum in said suction cup, whereby the resulting reaction between said extension and said support causes movement of said casing relative to said support, said toy also comprising a sounding device mounted between said actuator and said casing so as to be reciprocated by movement of said actuator in the respective directions between said release position and said cocked position, said device being adapted to produce sound during its movement in at least one direction.

2. An action toy comprising a hollow casing, a rigid actuator for said toy supported within said casing and movably mounted therein, said actuator having a rigid extension which normally protrudes outwardly of said casing, means including normally inactive delayed action release means mounted within said casing and normally hidden from view thereby for coupling said actuator and said casing, said delayed action release means being adapted to be activated by movement of said actuator rigid extension by an externally applied force thereto

4

whereby said actuator is moved into a cocked position, spring means coupling said actuator and said casing and adapted to be tensioned by movement of said actuator to said cocked position, said spring means being adapted to automatically move said actuator in a fixed path whereby said rigid extension is guided by said casing upon release of said actuator by said delayed action release means, and moves in a fixed path externally of said casing.

3. An action toy according to claim 2, said toy also comprising a sounding device mounted on said toy to become activated and produce a sound when said actuator moves from said cocked position to said released position.

4. An action toy according to claim 2, said toy also comprising an air operated sounding device mounted within said casing and adapted to be moved and create a sound when said actuator moves from said cocked to said released position.

5. An action toy according to claim 2, said actuator being guided by said casing to move said rigid extension in a lineal reciprocating path.

6. An action toy according to claim 2, said actuator being pivotally mounted in said casing and adapted to move said rigid extension therefrom in a circular path.

7. An action toy comprising a rigid hollow casing, an actuator for said toy supported by said casing and movably mounted therein, said actuator having a rigid extension which protrudes outwardly of said casing, means including normally inactive delayed action release means for coupling said actuator and said casing, said delayed action release means being adapted to be activated by movement of said actuator rigid extension by a force applied externally thereto whereby said actuator is moved into a cocked position, an air operated bellows type noisemaker mounted between said actuator and said casing and adapted to be compressed by movement of said actuator in one direction, spring means coupling said actuator and said casing and adapted to be tensioned by movement of said actuator to said cocked position, said spring means being adapted to automatically move said actuator from said cocked position whereby said rigid extension is guided by said casing upon the release of said actuator by said delayed action release means, and moves in a fixed path externally of said casing, said bellows type noisemaker creating a noise when said actuator moves from said cocked position to said released position.

8. An action toy according to claim 7 whereby said delayed action release means comprises a suction cup mounted on said actuator and adapted to engage said casing for cocking of said actuator whereby release from said cocked position occurs upon loss of vacuum by said suction cup.

9. A delayed action noisemaking toy having a hollow casing, a rigid actuator movably mounted within said casing, and having a rigid extension which protrudes outwardly of said casing, a suction cup mounted on said actuator adapted to be operatively engaged with a flat surface of said casing when said actuator is urged from the exterior of said casing, spring means coupling said actuator and said casing and adapted to be tensioned by cocking said actuator, said spring means being adapted to automatically move said actuator in a fixed path relative to said casing whereby said actuator is guided to a release position upon loss of vacuum in said vacuum cup and release from said flat surface, a sound producing device mounted between said actuator and said casing in the path of movement of said actuator from said cocked to said release position whereby said sounding producing device is caused to create a sound upon release of said actuator from said cocked position.

10. An action toy comprising a hollow casing, an actuator movably mounted within said casing, said actuator having a rigid extension which protrudes outwardly of said casing and which is adapted to bear against the support for said toy when in a cocked position,

5

means including normally inactive delayed action release means mounted within said casing and hidden during the operation of said toy from view for coupling said actuator and said casing, said delayed action release means being adapted to be activated by movement of said rigid extension of said actuator relative to said casing by externally urging said actuator into a cocked position, spring means coupling said actuator and said casing and adapted to be tensioned by cocking said actuator, said spring means being adapted automatically to move said actuator in a fixed, guided path relative to said casing upon release of said actuator by said delayed action release means, whereby the resulting reaction between said extension and said support causes movement of said casing relative to said support, said actuator being slidably engaged within said casing and adapted, in movement from said cocked position to said release position to travel essentially a linear path relative to said casing.

11. An action toy comprising a hollow casing, an actuator movably mounted within said casing, said actuator having a rigid extension which protrudes outwardly of said casing and which is adapted to bear against the support for said toy when in a cocked position, means including normally inactive delayed action release means mounted within said casing and hidden during the operation of said toy from view for coupling said actuator and said casing, said delayed action release means being adapted to be activated by movement of said rigid extension of said actuator relative to said casing by externally urging said actuator into a cocked position, spring means coupling said actuator and said casing and adapted to be tensioned by cocking said actuator, said spring means being adapted automatically to move said actuator in a fixed, guided path relative to said casing upon release of said actuator by said delayed action release means, whereby the resulting reaction between said extension and said support causes movement of said casing relative to said support, said actuator having a section thereof normally projecting thru an opening in said toy casing to a degree whereby it is movable by application of a force thereto while holding said casing to engage said

6

delayed action release means into said cocked position within said casing, said actuator being supported in sliding bearing by said casing to travel essentially a linear path between said cocked and said uncocked position.

12. An action toy comprising a hollow casing simulating an animal body, an actuator movably mounted within said casing, said actuator having a rigid extension having an outer end simulating an animal tail which protrudes outwardly of said casing and which is adapted to bear against a relatively fixed reaction support when in a cocked position and to partially carry the weight of the toy, means including normally inactive delayed action release means mounted within said casing and hidden during the operation of said toy from view for coupling said actuator and said casing, said delayed action release means being disposed intermediate an inner end of said actuator and said casing, said delayed action release means being adapted to be activated by movement of said rigid extension animal tail of said actuator relative to said casing by manually externally urging said actuator into a cocked position, spring means coupling said actuator and said casing and disposed to be tensioned in cocking said actuator, and to propel said actuator relative to said casing upon release of said actuator by said delayed action release means, whereby the resulting reaction between said extension and said support causes movement of said casing relative to said support.

13. An action toy as set forth in claim 12, said release means comprising a suction cup.

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