Nov. 4, 1924. 1,514,216

L. MARX

FIGURE TOY

Filed Jan. 5, 1924

Fig. 1.

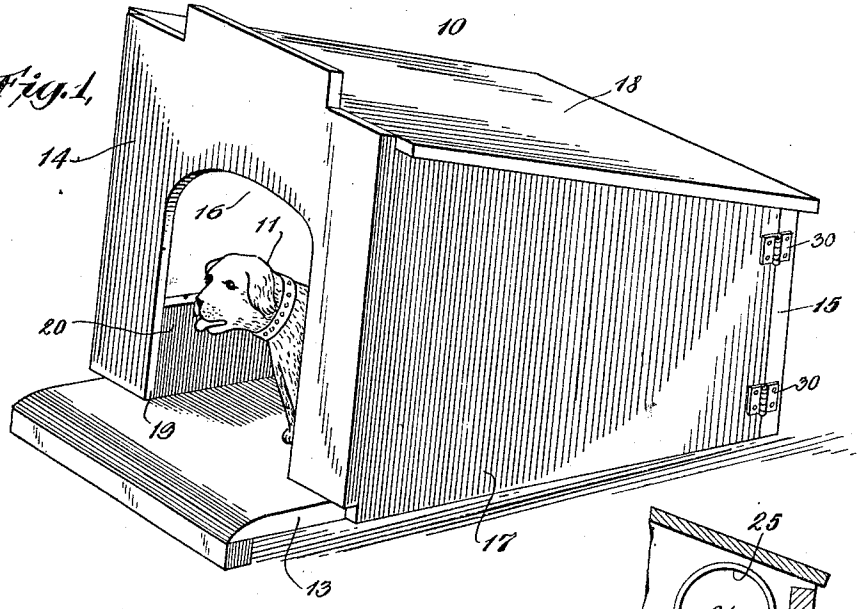


Fig. 2.

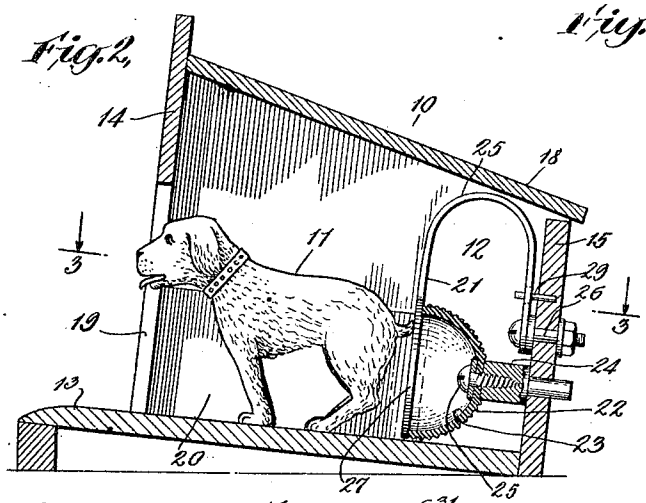


Fig. 4.

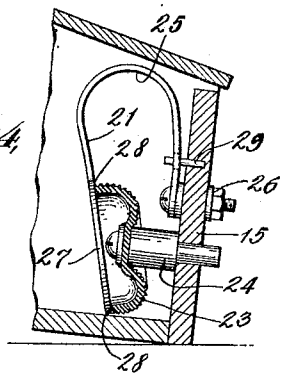


Fig. 5.

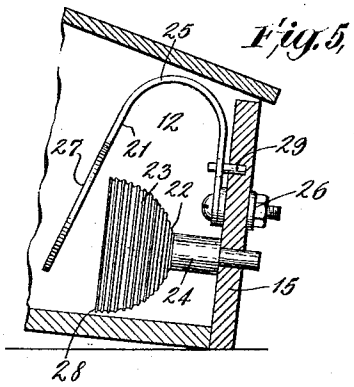
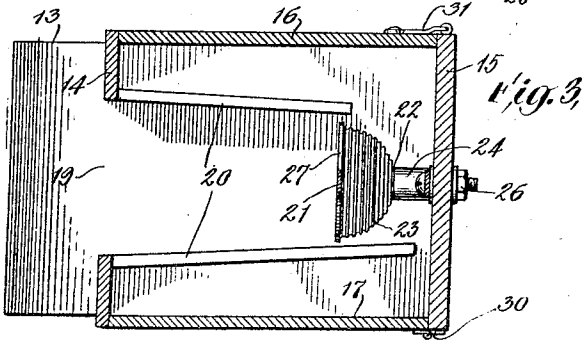


Fig. 3.



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UNITED STATES PATENT OFFICE.

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FIGURE TOY.

Application filed January 5, 1924. Serial No. 684,536.

To all whom it may concern:

Be it known that I, LOUIS MARX, a citizen of the United States, and resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Figure Toys, of which the following is a specification.

This invention relates to a toy, and relates more particularly to a toy embodying means for setting a movable member such as a toy figure into a sudden and unanticipated activity.

A prime desideratum of my present invention comprehends the provision of a toy in which the means for operating a toy figure is constructed and designed so as to be capable of storing potential energy for a time interval and of being automatically releasable for suddenly imparting an energetic and unexpected movement to the toy figure.

A further prime object of my present invention includes the provision of a toy of the nature referred to made of parts of an inexpensive structure and design associated or interrelated in a simple manner for producing a toy which is subject to an ease and economy of manufacturing and assembling operations, and which is durable, of low cost, and easily operable.

To the accomplishment of the foregoing and such other objects as may hereinafter appear, our invention consists in the elements and their relation one to the other, as hereinafter 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 perspective view of the toy of my invention,

Fig. 2 is a longitudinal cross-sectional view thereof showing the parts in a potentially energized position,

Fig. 3 is a view taken in cross-section on the line 3—3, Fig. 2, and

Fig. 4 is a fragmentary cross-sectional view showing the position of the parts when the same are being energized, and

Fig. 5 is a fragmentary view showing the parts in released position.

In its broader aspects my invention comprises mechanism which is adapted to be potentially energized and which is constructed to store or retain the energization for a time interval so that the same may be automatically released after a time for forcibly propelling or actuating a movable member such as a toy figure. In its more specific aspects, my invention consists in the provision of a housing which may take the form of a kennel or stall or the like defining a compartment in which a toy figure of a dog, horse or the like is positionable for forcible and sudden expulsion from the housing when the operating mechanism is automatically releasable.

Referring now more in detail to the drawings, in which I show a preferred embodiment of my invention, the invention comprises a housing generally designated as 10 defining a compartment in which a toy figure 11 may be placed in position to be operated upon by a mechanism generally designated as 12 for expelling or ejecting the figure from the housing.

The housing 10, as heretofore noted, may take the form of a kennel having the floor or bottom 13, the front wall 14, the movable rear wall 15, side walls 16 and 17, and the sloping roof 18, these parts for economy and convenience of manufacture being preferably made of wood suitably connected and joined together. The front wall 14 is suitably cut away to provide the open doorway or opening 19, through which opening the figure 11 is adapted to be expelled; and attached to the front wall 14 and bottom 13 I preferably provide the side guides 20, 20 for guiding the toy figure 11 into the desired position as shown in the drawings.

In the present form of my invention, the operating mechanism 12 comprises a spring actuated ejecting means 21 and a restraining means 22, these parts being associated so that when the ejecting means 21 is moved to an energized position, as shown in Figs. 2 to 4 of the drawings, the restraining means 22 will hold or restrain the ejecting means 21 in a potentially energized condition for an interval of time, after which the ejecting means is automatically released for movement from the position shown in Fig. 2 to that shown in Fig. 5 for forcibly and suddenly propelling the toy Figure 11 through the front wall opening 19.

The restraining means 22 in the present form of my invention comprises a pneumatic member in the form of a hemi-spherical shell 23 having a resilient or rubber wall secured to a supporting post 24 by means of a secur-

ing element 25, the said post 24 being removably carried for replacement by the rear housing wall 15. The spring ejecting member 21 may suitably comprise a leaf spring provided with a bowed portion 25, an end of which is removably attached to the rear wall 15 by means of the securing device 26, the ejecting member further including a disk portion 27 arranged to overlie the front opening of the pneumatic shell 23 so as to be movable in sealing engagement with the marginal edge 28 of the shell 23. If desired, the spring ejecting member 25 may be held against rotation or lateral movement by means of a pin 29 mounted in the rear wall 15 and receivable by a suitable opening in the leaf spring 21.

To permit access to the mechanism 12 for repair or replacement of the parts thereof, the entire mechanism is, as will be evident, mounted on the rear wall 15 which is movably attached to the side wall 17 by means of the hinges 30 and which is adapted to be secured in position by means of the latch member 31.

The manner of making and using the toy of my invention will in the main be apparent from the above detailed description thereof. The parts of the actuating mechanism 12 normally assume the position shown in Fig. 5 of the drawings. For setting the mechanism into operation the toy figure 11 is moved into the housing 10 guided by the side guides 20, and is forced against the spring ejecting member 21 until the operating parts assume the position shown in Fig. 4 of the drawings, with the resilient pneumatic shell 23 in collapsed condition. By moving the parts into the position shown in Fig. 4, the volumetric capacity of the shell 23 is decreased and when the force or pressure exerted on the figure 11 and spring 21 is released, the ejecting member 21 and the pneumatic restraining means move to the position shown in Figs. 2 and 3 of the drawing due to the tendency of both the spring ejecting means and the pneumatic restraining means to assume or resume their normal positions. It will be evident, however, that during the movement of the parts from the position shown in Fig. 4 to that shown in Fig. 2, the air in the pneumatic restraining means 22 is rarefied so that a suction effect is produced on the sealing disk 27 in opposition to the spring action thereof, with the result that the parts are maintained in the potentially energized position shown in Figs. 2 and 3 until the gradual seepage or leakage of air which takes place at the marginal edge 28 reduces the suction effect to a point where the restraining means is unable to hold the ejecting means in potentially energized position, at which time the latter is automatically and suddenly released for movement from the position shown in Fig. 2 to that shown in Fig. 5 for effecting the sudden and unexpected ejection of the toy from the housing.

While I have shown my device in the preferred form, it will be obvious that 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 toy comprising a housing having a front wall opening, the said housing defining a compartment in which a toy figure is positionable for expulsion through said opening, ejecting means within the housing for expelling the toy figure, and pneumatic means operative for restraining action of said ejecting means and for releasing the same to permit figure expelling action thereof.

2. A toy comprising a housing having a front wall opening, the said housing defining a compartment in which a toy figure is positionable for expulsion through said opening, a spring actuated ejecting means within the housing for expelling the toy figure, and pneumatic means operative for restraining action of said ejecting means and for automatically releasing the same after a time interval to permit the figure expelling action thereof.

3. A toy comprising a housing having a front wall opening, the said housing defining a compartment in which a toy figure is positionable for expulsion through said opening, ejecting means within the housing for expelling the toy figure, and pneumatic means operative for restraining action of said ejecting means and for releasing the same to permit figure expelling action thereof, the said pneumatic means consisting of a collapsible shell attached to the rear wall of said housing and having a resilient wall and the said ejecting means consisting of a bowed leaf spring having a sealing disk portion arranged to overlie an opening in said resilient wall, the construction being such that when the spring is forced against the shell the latter is collapsed to produce a suction action on the sealing disk in opposition to the spring action for effecting the said restraining operation.

4. A toy comprising a housing having a front wall opening, the said housing defining a compartment in which a toy figure is positionable for expulsion through said opening, ejecting means within the housing for expelling the toy figure, and pneumatic means operative for restraining action of said ejecting means and for releasing the same to permit figure expelling action thereof, the said pneumatic means consisting of a collapsible shell having a resilient wall and the said ejecting means consisting of a bowed leaf spring having a sealing disk

portion arranged to overlie an opening in said resilient wall, the construction being such that when the spring is forced against the shell the latter is collapsed to produce a suction action on the sealing disk in opposition to the spring action for effecting the said restraining operation.

5. A toy comprising a housing including front and rear walls, the said front wall being provided with an opening, the housing defining a compartment in which a toy figure is positionable for expulsion through said opening, and means carried by the said rear wall for operating the toy figure, the said means including an ejecting member consisting of a bowed leaf spring having a sealing disk portion and a hemi-spherical resilient shell member having an opening arranged to underlie the disk portion of the spring, the construction being such that when the spring is forced against the shell the latter is collapsed to produce a suction action in opposition to the spring action for restraining operation of the latter for a time interval, after which the spring is energetically released to eject the toy figure from the said housing.

Signed at New York city, in the county of New York and State of New York, this 29th day of December, A. D. 1923.

LOUIS MARX.