May 25, 1926. 1,585,887

M. C. BEACH

MECHANICAL TOY

Filed August 29, 1925

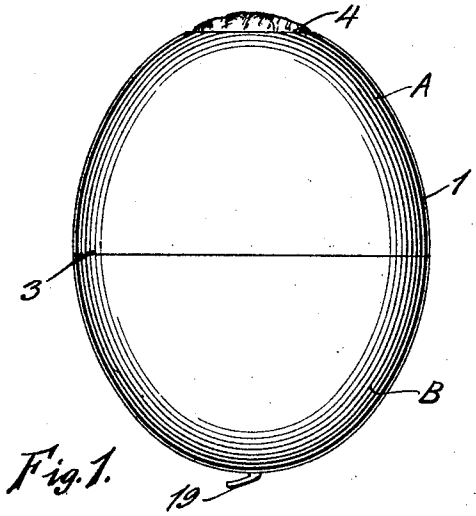


Fig. 1.

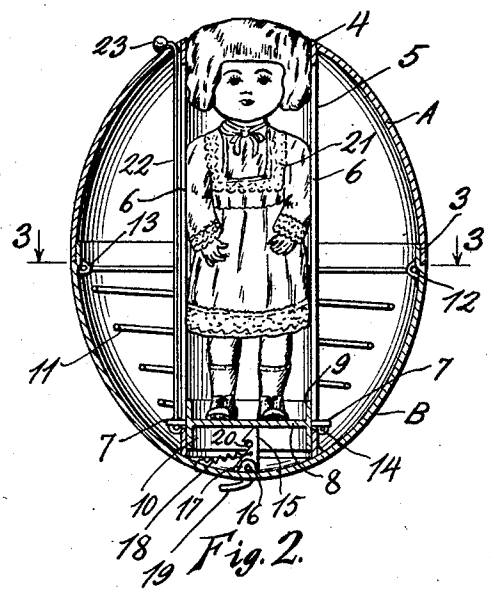


Fig. 2.

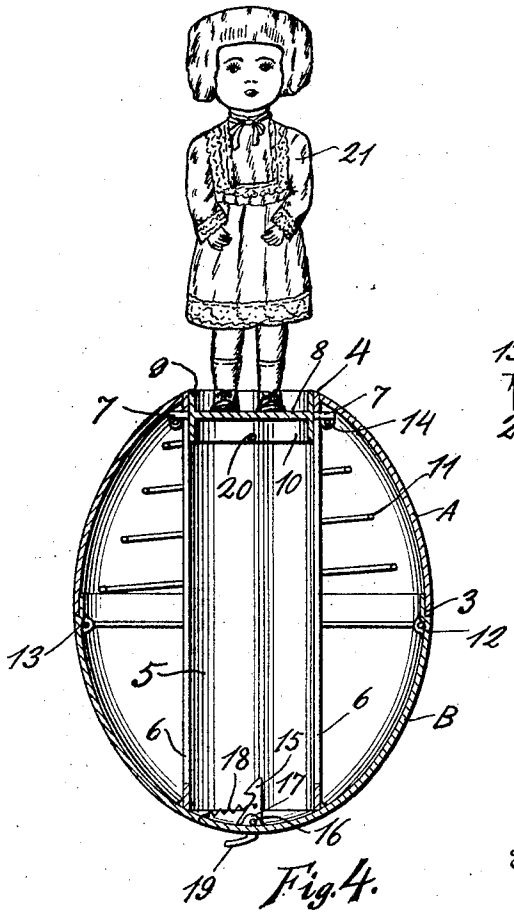


Fig. 4.

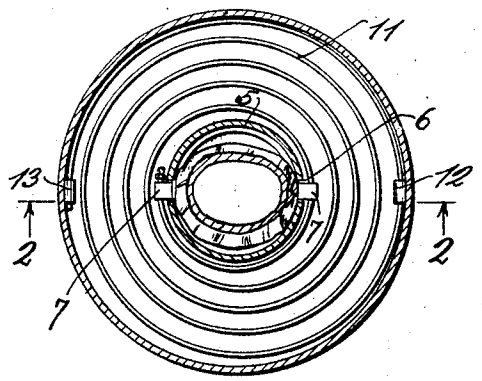


Fig. 3.

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UNITED STATES PATENT OFFICE.

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MECHANICAL TOY.

Application filed August 29, 1925. Serial No. 53,259.

This invention relates to improvement in mechanical toys.

It is the object of this invention to produce a simple and inexpensive mechanical toy of a pleasing design that shall be so designed and constructed that it can be readily operated and whose operation will cause surprise and merriment.

My invention briefly described is formed of a hollow egg shaped casing having one end open, a tube projects inwardly from the open end and extends the entire length of the egg. Within the tube is a transverse partition that is adapted to slide within the tube. The partition member has diametrically opposed pins that extend through slots in the sides of the tube and which limit the extent of the travel of the partition. A spring surrounds the tubular member and has one end engaging the pins. This spring tends to move the partition member towards the open end of the tube. I secure a miniature doll to the upper side of the partition; this doll is of such a length that when the partition member is in its lowermost position the doll is entirely within the tube. I have also provided a catch to hold the partition member in its lowermost position with the doll concealed. When the catch is released the doll will move quickly to an exposed position.

Having now briefly described my invention, I will now describe the construction and operation more in detail and for this purpose I shall have reference to the accompanying drawing in which the present preferred embodiment of my invention has been illustrated and in which—

Fig. 1 is a view showing my toy in closed position;

Fig. 2 is a vertical sectional view taken on line 2—2 Fig. 3;

Fig. 3 is a horizontal section taken on line 3—3 Fig. 2; and

Fig. 4 is a section similar to that of Fig. 2 but showing my device in open or extended position.

Numeral 1 designates an egg shaped casing formed by two sections, A and B, that are connected by some suitable point like that indicated by numeral 3. Section A has a central opening 4 to the inner edge of which the tube 5 is secured. Tube 5 has diametrically opposed slots 6 that serve to receive and guide the pins 7 that project from the sliding partition member 8. This member may be provided with circular flanges 9 and 10 in the manner shown or may be formed of a solid cylindrical member. Secured to the inner walls of the shell 1 is a conical coil spring 11. This spring has one end turn connected to the inside of the shell by means of clips 12 and 13 and has the smallest end turn 14 in contact with the pins 7. The spring is so wound that it is under compression when it occupies the position shown in Fig. 4 and therefore always tends to force the partition member upwardly to the upper end of tube 5. The coils of spring differ from each other in diameter to such an extent that the spring may be reversed and forced into the position shown in Fig. 2 in which position it acts like a tension spring and exerts a force tending to move the partition member 8 upwardly into the position shown in Fig. 4. In order to hold the partition member 8 in the position shown in Fig. 2 I have provided a catch comprising a hook 15 pivoted at 16 to a bracket 17. A spring 18 tends to hold the hook in the position shown in Fig. 4. The hook has a handle 19 that projects through the shell and by means of which it may be rotated about the pivot 16. A bar 20 is connected to the flange 10 and is in position to be engaged by the hook 15 when the partition is in its lowermost position (Fig. 2). A small doll 21 or other suitable figure, is attached to the upper side of the sliding partition. This figure is of the proper length to be entirely concealed when the parts are in the position shown in Fig. 2. When it is desired to have the doll emerge, the lever 19 is moved so as to release the partition. The spring 11 will then quickly move the parts to the position shown in Fig. 4. To close the toy pressure is applied to the head of the doll and it is moved downwardly to the position shown in Fig. 4 where the hook 15 will engage the rod 20 and hold the parts in closed position. I want to call particular attention to the peculiar arrangement of the parts with relation to the spring whereby a long range of movement can be obtained. It will be noted that the spring is made in the shape of a conical spiral that is coiled in such a way that it normally assumes the shape shown in Fig. 4 in which it is slightly compressed. From the position shown in Fig. 4 it can be moved into the position

shown in Fig. 2 where it is under tension. By means of this type of spring a longer range of movement can be obtained than could be obtained if a cylindrical coil spring were used. Where size will permit, a cylindrical coil spring may be substituted for the one shown.

In cases where it may be desirable to simplify the construction the spring and the latching device may both be dispensed with and one or more cords may be secured to the partition 8 and extend upwardly and through the shell in the manner shown in Fig. 2 where numeral 22 shows such a cord whose outer end has an enlargement 23. If the spring and locking device are removed the doll may be moved to the position shown in Fig. 4 by means of the cord, in a manner obvious from the drawing. In all of the embodiments referred to the guide tube 5 slots 6 and guide pins 7 are employed in the manner shown.

From the above it will be apparent that I have produced a simple, neat and interesting toy that can be cheaply made and which will form an interesting plaything for children.

Having now described my invention, what I claim as new is:

1. A toy comprising, in combination, an enclosing casing having an opening in one end, a guide tube extending inwardly from said opening, said tube being of smaller diameter than the interior of the casing whereby a space is formed between the outside of the tube and the interior of the casing, said tube having a slot extending longitudinally thereof, a toy figure slidably mounted in said tube, a conical coil spring having its largest turn connected with the wall of the enclosing casing at a point intermediate its ends, means extending through the slot for connecting the toy figure with the smallest turn of said spring, said spring being tensioned to move the toy out of the tubular guide but permitting it to be moved into the tube so as to be entirely enclosed thereby, the movement of the toy being approximately twice the length of the coil spring whereby when the toy is in projected position the spring is under compression and under tension when the toy is concealed.

2. A toy comprising a casing provided with an opening, a figure movable into and out of said casing, means for producing a force tending to move the toy out of the casing, said means comprising a conical coil spring whose smaller end may be moved past the plane of the larger end so as to change the spring from a compression spring to a tension spring, the largest coil of said spring being connected with the interior of the casing at points spaced from the bottom thereof and the smallest coil to the toy figure.

3. A toy comprising a casing having an opening at one end, a guide device extending inwardly from said opening, a toy figure movable along said guide so as to be entirely concealed within the casing or to project from the casing, means comprising a conical coil spring for projecting said toy figure said spring having its smaller end connected to the toy figure and its largest coil connected to the interior of the casing at a point intermediate the limits of movement of the inner end of the toy figure, said spring being tensioned so as to exert a force tending to move the toy outwardly and releasable means for holding the toy figure in position in the casing against the tension of said spring.

In testimony whereof I affix my signature.

MARY C. BEACH.