This invention relates to toys, especially for young children, and more particularly to an action toy operated by impact, preferably but not necessarily by means of a mallet.

The general object of the invention is to provide an improved toy for young children. A more particular object is to provide an action toy which is operated by impact, as by means of a mallet. Considered in different aspects, this object is the intention of the invention to provide a pounding toy for children in which the pounding results in an amusing action of the toy.

To accomplish the foregoing general objects, and other more specific objects which will hereinafter appear, my invention resides in the toy elements and their relation one to another as are hereinafter more particularly described in the following specification. The specification is accompanied by a drawing in which:

FIG. 1 is a vertical section taken through a toy embodying features of the invention;

FIG. 2 is a transverse section taken approximately in the plane of the line 2-2 of FIG. 1;

FIG. 3 is a view like FIG. 1, but showing a modification;

FIG. 4 is a fragmentary view, like FIG. 1, but showing a different form of the toy; and

FIG. 5 is a similar view showing still another form.

Referring to the drawing, and more particularly to FIG. 1, the toy comprises a base 12, a driving element 14 so mounted on the base that it is adapted to be driven downward, and an elongated slide member 16 projecting for a substantial distance from the base and having its lower end slidably received in the base. A return spring 18 urges the slide member longitudinally downward. A figure 20, in this case resembling a frog, is movable along the slide member 16. There are means to inhibit downward movement while affording upward movement of the figure, and in the present case the slide has serrations 22 engaged by a part 24 of the figure acting as a tooth or spur.

The toy further includes a force-transmitting and direction-changing means 26 between the driving element 14 and the slide member 16. In the present case the means 26 consists of a series of balls or spheres confined in a bowl and movable along a curved path 28. The balls may be made of a hard material, or if desired may be made of a somewhat resilient material such as polyethylene. In any case it will be seen that downward blows on the driving element 14, as by means of one's hand, or more preferably, by means of a mallet 30, will cause longitudinal reciprocations of the slide member 16, and consequent movement of figure 20 upwardly along the slide member. The head of the mallet may be made of rubber or a plastic material which will not readily mar furniture.

The upward and return movement of the slide member, for each blow, is so fast that it is almost imperceptible, which increases the amusement caused by the travel of the figure along the slide member.

It will be understood that the moving figure is propelled forward by transfer of force from the serrations to the matching tooth 24 on the figure. This sends it along in a series of leaps until it flies off the slide member at the end. The forward arms of the figure then engage the sides of the slide member to maintain the figure in proper position, but they do not prevent the tail portion and spur 24 of the figure from rising slightly as it moves over the serrations. To return the figure to the lower end of the slide member, it is merely necessary to hold the tail portion or spur above the serrations as the figure is slid freely down to the starting position.

Referring now to FIG. 3, the base 32, the driving element 34, the slide member 36, and return spring 38 all may correspond to the comparable parts shown in FIG. 1. However, the force-transmitting and direction-changing means 40 differs, and in the present case consists of a helical spring confined in and ready movable along a curved path 42. This spring has immediately adjacent coils, that is, at the top or concave side of the spring the coils about one another closely so that the spring acts as a force-transmitting means without excessive yielding when struck by the driving element 34.

Another form of the invention is illustrated in FIG. 4. In this case there again is a base 44 carrying a driving element 46, and also carrying an elongated slide 48 having its lower end slidably received in the base 44. The return spring 50 corresponds to that previously described. The force-transmitting and direction-changing means includes a pivoted lever 52 having one end generally beneath the driving element 46, and having its other end generally beneath the lower end of the slide member 48. The pivot of the lever is located between its ends, so that a downward movement of the driving element 46 causes an upward movement of the slide member 48.

Still another form of the invention is shown in FIG. 5. Here again there is a base 56 carrying a driving element 58 and a slide member 60, the latter being urged downward by a return spring 62. A figure 64 straddles and is movable along the slide member 60.

The force-transmitting and direction-changing means in this case consists of a slidable element 66 urged upward by its own return spring 68, this being a compression spring. The element 66 has a camming portion 70 underly the lower end of the slide member. A downward blow on the driving element 58 causes its sloping or wedge-shaped camming portion 70 to drive the slide member upwardly.

In FIG. 1 the upper end of the slide member 16 is dovetail of the stop means. When the figure 20 nearly reached the end of the slide, another blow sends the figure flying off the slide. However, stop means may be provided, and in FIGURE 5 a pin 72 extends transversely of the slide at its end, and serves to arrest movement of the figure when it reaches the end of the slide.

Another difference in FIG. 5 is that the moving figure 64 simulates a monkey with its arms 74 around the slide member 60. It will be understood that any other simulation may be employed, including mechanical objects such as an auto or an airplane, instead of a live creature.

By appropriate design of the lower part of the figure, the serrations may be formed on the bottom instead of on the top of the slide member. Moreover, it is not altogether essential to provide serrations. In FIG. 5 the arms 74 may be continued beneath the slide member, and the weight distribution of the figure may be such that the hands bear upwardly against the bottom of the slide member, while the tail bears downwardly against the top of the slide member. The resulting frictional engagement may be made sufficient to prevent downward movement of the figure. With most of the mass of the figure disposed above the slide member, as shown, a driving impact will cause a slight forward tilting of the figure as it moves upward, thus releasing the frictional engagement and readily permitting the upward movement. On return movement, however, the figure again assumes its natural balance, with upward pressure at the hands and downward pressure at the tail, thereby again holding the slide member with enough friction to prevent downward movement. Thus the design may be...
such as to inhibit downward movement while affording upward movement of the figure, even without using actual serrations on the slide member, although it is simpler to use serrations.

The top may be used as a pre-school amusement toy for small children. If desired, a number of such toys may be provided for use by a group of children, competing to see which can first send the figure flying from the end of the slide member.

The slide member may be inclined at a different angle than shown, and in extreme limiting cases might be vertical or horizontal, but an inclined member has advantages and is preferred.

It is believed that the construction and operation of my improved toy, as well as the advantages thereof, will be apparent from the foregoing detailed description. It will also be apparent that while I have shown and described the invention in several preferred forms, changes may be made without departing from the scope of the invention, as sought to be defined in the following claims.

I claim:

1. A toy comprising a base, a driving means on said base for movement in an up and down direction and adapted to be pounded downwardly as by means of a mallet, an elongated slide member projecting outwardly and upwardly for a substantial distance from said base and having its lower end only slidably received in said base, the entire projecting portion being exposed on all sides, a return spring directly connecting said slide member to said base for urging said slide member longitudinally toward the base, means simulating a figure slidably embracing and movable from one portion to a second portion of said slide member when said driving element is actuated, means to inhibit rearward while affording forward movement of said figure along said slide member, and a force-transmitting and direction-changing means between said driving element and said slide member, such that downward blows on the driving element cause longitudinal reciprocations of the slide member and consequent progressive movement of the figure along the slide member.

2. A toy as defined in claim 1 in which the slide is provided with stop means at its outer end to prevent the figure from flying off the slide on reaching the upper end.

3. A toy as defined in claim 1 in which the force-transmitting and direction-changing means comprises a series of contacting balls confined in but readily movable along a curved path, said series of balls extending between the lower end of the driving element and the inner end of the slide member.

4. A toy as defined in claim 1 in which the force-transmitting and direction-changing means comprises a helical spring with closely adjacent coils confined in but readily movable along a curved path, said helical spring extending between the lower end of the driving element and the inner end of the slide member.

5. A toy as defined in claim 1 in which the force-transmitting and direction-changing means includes a pivoted lever having one end generally beneath the driving element and having its other end generally beneath the lower end of the slide member, the pivot of said lever being located between its ends.

6. A toy as defined in claim 1 in which the force-transmitting and direction-changing means includes a slidable element with resilient means urging the same upwardly and having a camming portion underlying the lower end of the slide member.

7. A toy as defined in claim 1 in which the force-transmitting and direction-changing means between the driving element and the slide member is housed and concealed in said base.

References Cited by the Examiner

UNITED STATES PATENTS
2,554,116 5/51 Monier 124—52 X
2,618,376 11/52 May 46—1
3,085,767 10/61 Keuls 124—1 X

FOREIGN PATENTS
657,431 1/29 France
373,846 4/23 Germany

RICHARD C. PINKHAM, Primary Examiner.