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3,003,767 AMUSEMENT DEVICE WITH PROJECTIBLE OBJECT

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This invention relates to an amusement device and is more particularly concerned with a combined pounding toy and game which is adapted to be used both by children and adults.

It is well known that young children like to strike objects, either with their hands or with some striking implement, such as a hammer. However, the release of this natural urge, if not controlled, may have undesirable consequences. As a result many so-called "pounding toys" have been proposed which involve pegs or pins which are adapted to be struck with a mallet or hammer and pounded into a board. While such toys have found considerable use, they have limited utility and are generally confined to use by children within a narrow age group. As children grow older they soon tire of such toys.

It is an object of the present invention to provide an amusement device which has some of the features of a pounding toy but which also includes features which make the device attractive as a toy and plaything for children of all ages.

It is a further object of the invention to provide an amusement device of the character indicated which, in some embodiments, is suitable for use as a game both by children and adults.

In accordance with the invention, there is provided an amusement device which is defined by the combination of a base, a vertical casing on the base providing a guide-way for a projectible object, a movable actuating member in the base adapted to be struck as with a hammer, mallet, or like striking implement, and a force transfer unit which is adapted to transmit the movement of the actuating member to the projectible object to cause the latter to be projected upwardly in the vertical casing. In accordance with the invention, the vertical casing is provided at its upper end with a receptor tray adapted to catch the projectible object as it falls back after having been projected from the casing.

It is a feature of the invention that the movable actuating member may be operated directly by the hand of the child or by striking with an implement.

It is a further feature of the invention that the projectible object is projected from a remote point with respect to the movable actuating member upon operation of the latter.

It is a further feature of the invention that the toy is adapted to accommodate a variety of projectible objects and is not limited in its utility to a single object.

It is a still further feature of the invention that the device is adapted to be used for the amusement of children and adults alike.

Other objects and features of the invention will be readily apparent from the following detailed description of certain illustrative embodiments of the invention and from the accompanying drawings wherein,

FIG. 1 is a vertical sectional view of the toy combined with the receptor tray taken approximately along the line 1-1 of FIG. 3.

FIG. 2 is a perspective view of the receptor tray adapted to be combined with the vertical casing of the amusement device as shown in FIG. 1; and

FIG. 3 is a top plan view of the tray of FIG. 2.

Referring to the drawings, and more particularly to FIG. 1, the amusement device illustrated is formed from

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a base 12 adapted to accommodate a reciprocating driving element 14, a vertical hollow casing 16, and a vertically-movable driving or actuating member 18. In the embodiment illustrated, base 12 is defined by laterally spaced-apart side rails 20, end rails 22 which define a channel in which the driving element 14 is received, and feet 24 and 25. The side rails and end rails are secured to the feet in any convenient manner, as by screws 26. Each side rail 20 is formed with a guiding slot or groove 27 in which is guided a rib or side flange carried on each side by the body of the driving element 14. The element 14 is chamfered at its end to define cam surfaces 30 and 31 which impart to driving element 14 a trapezoidal longitudinal cross-section. Vertical casing 16 which extends upwardly from one end of base 12 is defined by side walls 35 which enclose a guiding liner defined by side and end walls 38. The walls 37 are received in the channel and are secured to the adjacent rails, the side rails 20 being formed with cut-outs or notches to accommodate the walls 37 and permit passage of the driving element 14 as it reciprocates in the channel. The walls 35 of the casing 16 are secured to the walls of the liner by any convenient means such as nails or screws (not shown).

The driving element 14 is driven in channel 23 in the direction of casing 16 by the downward movement of actuating member 18 which has a base portion having sloping side walls 40 and 41 engaging, respectively, the cam surface 31 of the driving element 14 and the inner wall of the adjacent end rail 22. The slope of the side walls 40 and 41 corresponds substantially to the slope of the cam surface 30. The upper or body portion 43 of the actuating member 18 is suitably, although not necessarily, covered with a resilient surface such as a pad 45 of sponge rubber. The foot 25 is formed with a groove 46 of triangular cross-section to receive the base portion of the member 18 when it is moved downwardly to drive the element 14 toward the casing 16. The driving element 14 is normally biased in the direction of member 16 by any convenient biasing means, such as the spring 50 secured to the element 14 and to the foot 25 at 52 and 53, respectively. A retaining cord 55 connects the bottom of actuating member 18 to the foot 25 in order to restrain upward movement of the former within predetermined limits when the driving element is urged against it.

The forward end of the driving element 14, viz. the end which extends under the casing 16, has, as mentioned, a cam surface 30 having substantially the same inclination as the cam surface 31, viz. an inclination of about 45°. Engageable with the forward end of element 14 is a projecting block 58 having the same general appearance as the actuating member 18. Block 58 has a base portion with sloping side walls 60 and 61, the former being engaged by the cam surface 30. As will be apparent by reference to the drawing, when the actuating member 18 is struck in a downward direction, as by the hand or by means of an implement such as a mallet (not shown), the driving element 14 will be driven toward the casing 16 and interengagement between the cam surfaces 30 and 60 of the driving element and of the block 58, respectively, will cause the block to be projected upwardly within the casing.

Anything resting upon the block 58 will also, of course, be projected upwardly and if sufficiently light, it will be projected entirely out of the casing. It will be understood that the projectible object, may have various forms and may be a ball or other object which will be projected upwardly in response to upward movements of the block 58.

An embodiment of my amusement device which is provided with means for catching the projectible object after it has been ejected from the casing is illustrated in

FIGS. 1 to 3. There is shown a ball 80, which is suitably a rubber ball, and the top of the vertical hollow casing 16 has been provided with a receptor tray 82. As seen in FIGS. 2 and 3, the tray 82 has a flat body portion 83 formed with a central aperture 84 which has a cross-section corresponding substantially to the cross-section of the interior of casing 16, which, in the embodiment illustrated, is square, and with a plurality of circular apertures 85 dimensioned to receive the ball 80 but not permitting it to fall from the tray. Surrounding the body portion 83 is a rim or flange 88 and the body portion is provided on its lower side with a collar 90 which is spaced from the central aperture 84 to receive the side walls 35 of the casing 16, suitably with a friction fit, although the interengaging parts may be rigidly connected, as by screws or nails (not shown), if desired.

It will be seen that this embodiment of my invention may be used as a scoring game both by children and adults. For this purpose, the several circular apertures 85 may have indicia indicating different point values or the like associated with them. In playing a game with the device of FIGS. 1 to 3, the actuating member 18 is struck with the hand, e.g. the fist, or with an implement such as a mallet, and the ball 80 will be projected out of the casing 16. As the ball falls again, it will be caught by the tray 82 and will tend to roll into one of the circular apertures 85, the rim 88 restraining the ball from rolling off the tray. The point value of the aperture in which the ball comes to rest is recorded, and the player scoring the highest point value is the winner.

It will be apparent to those skilled in the art that various changes and modifications may be made in the embodiments described above and illustrated in the drawings without departing from the scope of the invention as defined in the appended claims. For example, instead of being formed from individual interconnected elements, the side and end rails and feet of the base 12 may be integral. Similarly, the casing 16 may be secured by other means to the base and, in particular, the guiding liner may be omitted and the walls of the casing extended into the base or provided with end flanges to permit the casing to be secured to the base. In some instances, as when the projectible object is a rigid ball, e.g. a solid wooden ball, as in the embodiment of FIGS. 1 to 3, the block 58 may be eliminated and the rigid ball brought into direct contact with the cam surface 30 of the driving element 14. When, however, the ball is formed from a deformable material such as rubber, celluloid or the like, the block 58 is advantageously retained. The amusement device of my invention may be formed from any convenient material of construction such as wood, metal, or a plastic such as molded phenol-formaldehyde resin, polystyrene, or the like, or other material having reasonable impact strength, or a combination of different materials may be employed. It will further be understood that, insofar as they are not mutually incompatible, the various features and details of construction of the several embodiments shown and described are interchangeable with one another. It is intended, therefore, that all matter contained in the foregoing description and in the drawings shall be interpreted as illustrative only and not as limitative of the invention.

What I claim and desire to secure by Letters Patent is:

1. An amusement device comprising, in combination, means defining an elongated base, an upwardly-extending hollow casing supported adjacent one end of said base and defining a confined guide-way for a projectible object adapted to be disposed in said casing, a movable project-

ing member in said casing adapted to engage said projectible object, a movable actuating member adjacent the other end of said base adapted to be struck and moved by a force directly applied to it by the user of the device, and a force transfer member movable in said base for transmitting the movement of the actuating member to the projecting member to cause the latter to project said projectible object upwardly in said casing solely in response to the actuating force applied by the user upon the actuating member, said actuating member and said force transfer member having cooperating cam surfaces and said projecting member and said force transfer member having cooperating cam surfaces whereby downward movement of said actuating member causes upward movement of said projecting member, said casing having an opening at its upper end and said guide-way being walled to prevent egress of said projectible object from said guide-way except through said opening at said upper end, and a receptor carried by said casing and surrounding said opening for catching the projectible object after it has been projected from said casing by said force, said receptor comprising a tray extending substantially beyond at least a portion of said base and provided with a plurality of apertures dimensioned to receive and retain the projectible object.

2. An amusement device comprising, in combination, means defining an elongated base, an upwardly-extending hollow casing supported adjacent one end of said base and defining a confined guide-way for a projectible object adapted to be disposed in said casing, a movable projecting member in said casing adapted to engage said projectible object, a movable actuating member adjacent the other end of said base adapted to be struck and moved by a force directly applied to it by the user of the device, and a force transfer member movable in said base for transmitting the movement of the actuating member to the projecting member to cause the latter to project said projectible object upwardly in said casing solely in response to the actuating force applied by the user upon the actuating member, said actuating member and said force transfer member having cooperating cam surfaces and said projecting member and said force transfer member having cooperating cam surfaces whereby downward movement of said actuating member causes upward movement of said projecting member, said casing having an opening at its upper end and said guide-way being walled to prevent egress of said projectible object from said guide-way except through said opening at said upper end, and a receptor carried by said casing and surrounding said opening for catching the projectible object after it has been projected from said casing by said force, said receptor comprising a tray extending substantially beyond at least a portion of said base and provided with a plurality of apertures dimensioned to receive and retain the projectible object, said projectible object being a ball and said apertures having associated therewith score-indicating indicia.

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