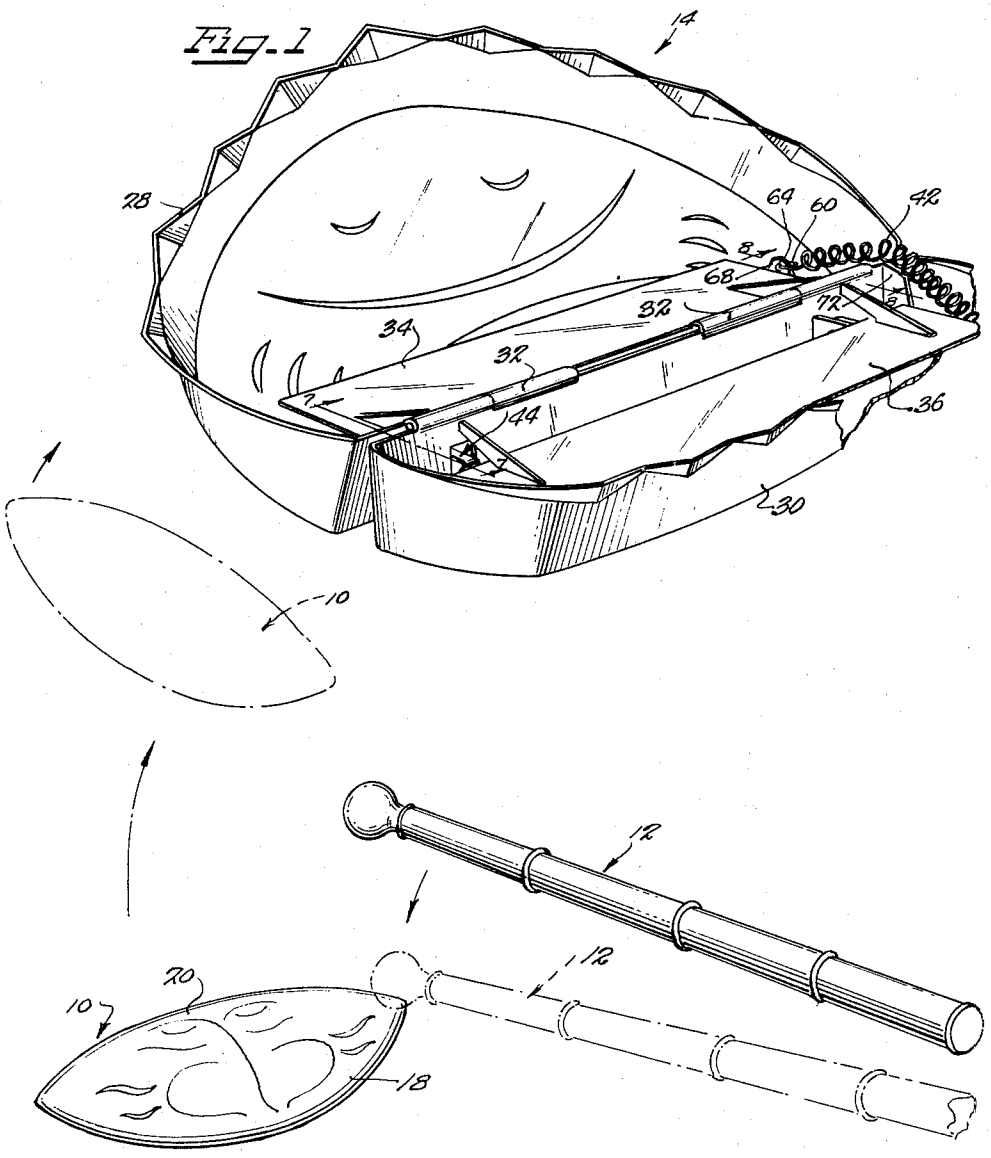
Feb. 11, 1964 M. I. GLASS ETAL 3,120,958

GAME

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Fig. 1



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GAME

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Fig. 2

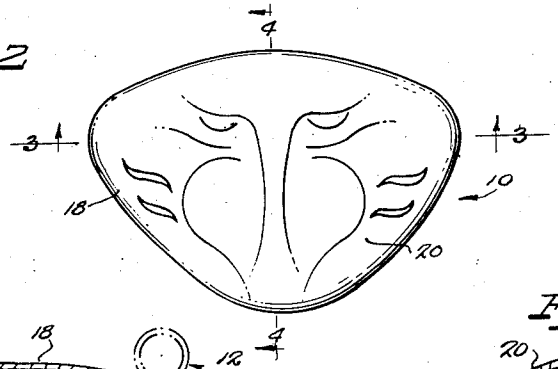


Fig. 3

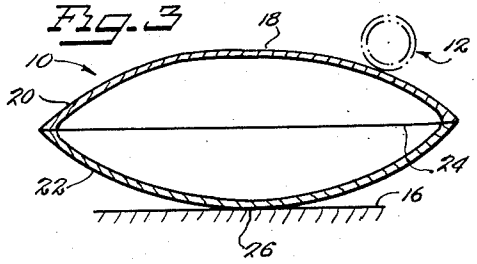


Fig. 4

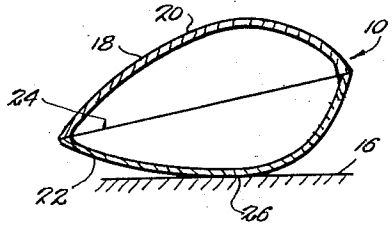


Fig. 5

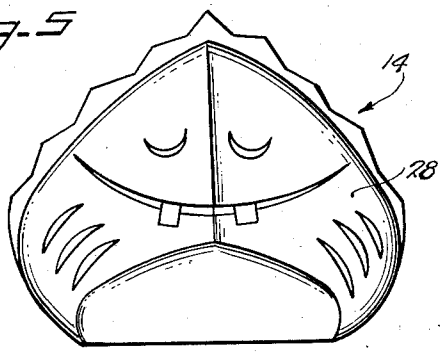


Fig. 6

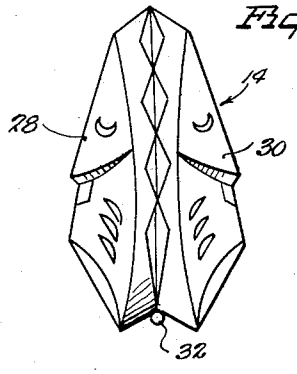


Fig. 8

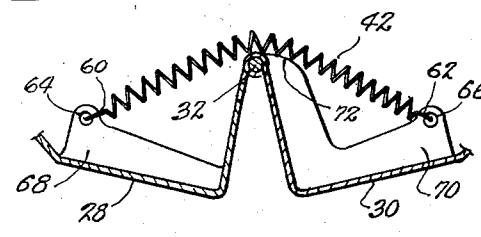
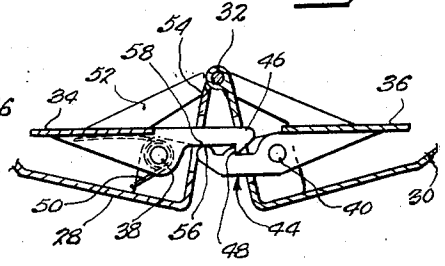


Fig. 7



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3,120,958

GAME

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4 Claims. (Cl. 273—95)

This invention relates to a game or toy in which a stick is used to propel a missile through the air into a relatively stationary receptacle. More particularly, the invention relates to a toy or game in which an irregularly shaped missile lying at rest upon the playing surface is struck vertically with a stick in such manner as to cause the missile to fly through the air. The object of the game is to strike the missile so as to propel it in the direction of a receptacle or goal. More particularly, the invention relates to a toy or game including a receptacle which automatically closes upon any object falling therein.

The object of this invention is to provide a toy or game in which a game piece or game pieces are propelled through the air by being struck vertically with a stick by a player. It is the further object of the invention to provide a toy or game in which a receptacle is used which snaps shut upon the first object falling therein. A still further object is the provision of such a toy which is of inexpensive construction and which develops manual dexterity in a child without requiring any great initial skill.

In its broadest sense the game is not unlike the ancient game of tiddlywinks which involves snapping small disks into a cup using larger disks for the snap action. In the instant invention the missile is not a disk. It does not lie flat upon the ground or floor, rather it rests upon a single point. In its preferred form, the object is not round in any dimension. Hench it does not rall easily, nor is it manipulatable with equal facility in all directions. Rather than being propelled by snap action, the missile is propelled by being struck with a stick vertically at a point horizontally displaced from the point on which the missile rests. The shape of the missile is such that either a resultant force results which acts to project the missible from under the stick much in the manner of projecting an orange seed by squeeing it or a lever action results which propels the missile up and over the striking stick in the direction from which the blow was struck. The game is thus athletic and not merely a game of manual dexterity. In addition to being entertaining and competitive, the game involves considerable exercise. On the other hand, the missile and striker are preferably made of relatively soft plastic material such as polyethylene, and it is not so vigorous a game as to preclude its being played indoors.

The game is simple enough that it can be played by very young children who are unable to play more complicated games involving a large number of rules or requiring a high degree of coordination At the same time, the irregular shape of the object makes it difficult even for adults to propel it in the proper direction and hence makes it interesting for older children, and further makes the game suitable for play between children and parents

In its preferred form, the game involves a receptacle or trap which snaps shut over the first object to be propelled into it. This adds to the excitement of the game and makes it clear who has won, thus eliminating unseemly disputes among the participants.

Another advantage to the game is that it is suitable of being played by one person. A child can thus entertain himself for many hours.

Other objects and advantages of the disclosed toy

or game will be understood from the following description and the accompanying drawings, in which:

FIGURE 1 shows the entire game of the invention, including its manner of operation;

FIGURE 2 shows a top elevation of the missile used in playing the game shown in FIGURE 1;

FIGURE 3 is a vertical cross-sectional view of the missile shown in FIGURE 2, taken along the line 3—3;

FIGURE 4 is a side elevation of the missile shown in FIGURES 2 and 3, taken from the line 4—4;

FIGURE 5 is a front elevation of the receptacle used in playing the game shown in FIGURE 1, taken with the receptacle in its closed position;

FIGURE 6 is a side elevation of the receptacle shown in FIGURE 5;

FIGURE 7 is an enlarged cross-sectional view of the latching mechanism and target means of the receptacle shown in FIGURE 1, taken along section 7—7; and

FIGURE 8 is an enlarged cross-sectional view of the spring biasing means for closing the receptacle shown in FIGURE 1, taken along section 8—8.

In FIGURE 1 is illustrated the preferred form of the invention. As illustrated, the game or toy includes three parts: an object o rmissile 10, a stick 12, and a receptacle or trap 14. The solid lines show the missile at rest on the playing surface which may be on the floor or the ground. The receptacle 14 is shown in its armed condition ready to receive the missile. Stick 12 is shown by solid lines preparatory to striking the missiie 10. At least some component of the motion of the stick 12 is downward. Stick 12 is shown by dotted lines in its position where it has struck the missile 10, whereupon the missile 10 may have moved to the position shown by dotted lines enroute to the receptacle 14. Missile 10 is shown in greater detail in FIGURES 2, 3 and 4.

FIGURE 2 shows the top view of the missile, which has an oval shape in this view and is symmetrical about one axis. It is preferably not elliptical, however, for reasons that will be explained below.

FIGURE 3 shows missile 10 taken in the vertical section along axis 3—3. In this FIGURE 3, the missile is shown in relation to the ground or floor 16. The missile is hollow and comprises a hollow shell 18 which is preferably made of a self-sustaining resilient material such as polyethylene. In this section the missile is generally symmetrical about two perpendicular axes, and may be elliptical. FIGURE 4 is a side elevation. As shown in FIGURE 4, the missile 10 is made of two symmetrical halves 20 and 22 cemented or fused together along the line of symmetry 24 or it can be made in one piece. In this section the missile is preferably not symmetrical about any other axis but it is generally oval. The missile 10 is shown at rest on floor 16. If the floor is flat and the missile relatively smooth, the missile will rest upon a relatively small area 26. In fact, the missile may be considered to have a point upon which it rests.

Obviously the missile can be struck horizontally with the stick 12 and can be struck anywhere about its upper surface. However, to propel the missile into the receptacle 14 it is necessary to cause it to move upward so as to move freely through the air; it cannot roll into the receptacle 14. Depending upon how smooth the playing surface is, the missile 10 will generally lie in a relatively flat position on one of its most nearly flat surfaces. When the missile is in such position and is struck vertically at any point other than above the point upon which it rests, a rotary motion is imparted to the missile. Thus as the stick 12 is moved rapidly downward from the position in which it is shown in FIGURE 3 a turning moment is applied to the missile 10 and the missile rotates. At the same time the point of contact 26 with the ground 16 moves toward the stick 12. Fric-

tional forces between the ground and the missile and the continued force of the stick 12, as well as the upward force exerted by the ground 16, cause the missile 10 to fly up as previously described.

If the missile were originally oriented properly with respect to the receptacle 14 and if stick 12 is directed in the proper direction with appropriate force and is caused to strike the missile at the proper place, the missile will fly into the receptacle and the game is won. On the other hand, if the missile is too far away or is not properly oriented or struck, it will miss the receptacle and bounce erratically into some random position whereupon the player must strike it again. Because of its oval shape the missile will fly up when struck at a point horizontally displaced from its point of rest. At the same time because of its asymmetrical shape, the missile cannot be propelled with equal facility in all directions. Thus the manner in which the missile must be struck to make it go an appropriate distance in the proper direction depends upon how it happens to fall, for the missile must be struck differently when the major dimension of the missile is pointing toward the receptacle than when the minor dimension is pointing toward the receptacle. Because of its irregular shape, it is substantially impossible to predict exactly how and where to strike the missile to make it fly into the receptacle. This adds to the interest to the more experienced and dextrous players. At the same time almost any child can learn to rap the missile with the stick to make it go generally in the proper manner.

An important feature of the game is the receptacle which is spring loaded to close abruptly whenever any missile enters it. Besides providing action, it clearly identifies the winner of the game, for succeeding missiles cannot enter the closed receptacle. As stated above, the receptacle is shown in its open and armed condition in FIGURE 1. A front elevation of the receptacle in its closed condition is shown in FIGURE 5, and a side elevation of the receptacle in its closed condition is shown in FIGURE 6. The receptacle 14 comprises two halves or enclosures 28 and 30 pivotally fastened together by hinges 32. Paddles 34 and 36 are pivotally mounted in respective enclosures 28 and 30. As shown in FIGURE 7, these paddles are pivoted about axes 38 and 40, respectively, which are both parallel to the axis of hinges 32. These paddles serve as triggers to operate the trap. The trigger mechanism is best shown in FIGURE 7 where part of the receptacle is shown in its open position. In particular, FIGURE 7 shows the latching mechanism for keeping the receptacle in its open position. Spring 42 is in an extended position when the receptacle is open and acts to close the receptacle whenever the latch 44 is released. The latch 44 comprises a hook 46 and a notch 48. Notch 48 is rigidly attached to the paddle 36. The weight of paddle 36 applies torque to rotate paddle 36 and notch 48 clockwise about pivot 40. At the same time hook 46 which is attached to paddle 34 is urged clockwise by spring 50. Thus when the enclosures 28 and 30 are forced apart against spring 42, the hook 46 falls into notch 48 and thereafter acts to keep the trap open by keeping the pivot points 38 and 40 from moving apart. A stop 52 is rigidly affixed to paddle 34 and acts to limit the clockwise rotation of paddle 34 and hook 46, which are stopped from rotating when stop 52 strikes surface 54 of enclosure 28. At the same time the strength of spring 50 is such as to balance the gravitational force of paddle 36. That is, spring 50 in urging hook 46 clockwise against notch 48 is more than enough to keep notch 48 from moving further in a clockwise direction until additional force is applied to paddle 36, such as occurs when missile 10 flies into the enclosure 30 and strikes the paddle 36. When this occurs paddle 36 moves clockwise and moves cam 56 against cam follower 58. This produces lever action forcing hook 46 out of notch 48, thus releasing the latch 44 whereupon spring 42 acts to close the trap. Alternatively, should the missile strike paddle 34, the spring 50 is not so strong as to keep hook 46 in notch 48 when the missile creates counter-clockwise torque, and again the latch is released thus permitting spring 42 to close the trap.

The manner in which the trap is closed is best illustrated in FIGURE 8. The two ends 60 and 62 of spring 42 are secured in respective eyes 64 and 66 in projections 68 and 70, respectively, which are rigidly secured to enclosures 28 and 30 respectively. To place the receptacle in its operating condition, the two enclosures 28 and 30 are manually moved apart about hinge 32 against spring 42 until the latch 44 is engaged. At this point the spring is bent over the hinge 32 and exerts a relatively small closing torque because of its small moment arm. Thus no great force is required by the latching means to maintain the receptacle in its open condition, particularly since the gravitational force exerted on enclosures 28 and 30 also acts to keep the receptacle open. On the other hand, as the trap closes the moment arm at which the spring 42 acts is increased thus increasing the closing torque. Bearing surface 72 is provided beneath the spring in order that the hinge does not fall between successive coils of the spring and lose the biasing action of the spring.

The game is ordinarily played by two or more children. Each begins with his game piece at a starting line some distance from the receptacle. The poorer players may be given a handicap by being permitted to start nearer the receptacle. At the signal, each player begins striking his game piece with his stick, advancing it toward the receptacle. When the first game piece enters the receptacle and strikes a paddle, the trap is sprung, ensnaring the game piece of the winning player.

Although the preferred form of this invention has been described in detail, various modifications are within the scope of this invention as limited only by the following claims.

What is claimed is:

1. A game adapted to be played on a generally horizontal surface and comprising a missile having a generally non-spherical configuration which permits rocking but prevents rolling of the missile along the supporting surface, means for striking a peripheral portion of said missile to impart a translocatory movement for the missile having a substantial vertical component, whereby said missile is moved through the air and away from the position at which it was struck, and goal means in position for receiving said missile when the latter is properly struck, said goal means comprising a pair of hingedly connected, complementary enclosures which are movable between an open position of rest on the playing surface providing a receptacle for said missile and a closed position preventing entry of a missile, a biasing means interconnecting said pair of enclosures to urge said enclosures toward their closed position, and a trigger means within said enclosures and connected with said biasing means so as to normally retain said enclosures in their open position but operative in response to the impact of said missile striking said trigger means to cause said enclosures to snap shut under the action of said biasing means.

2. A game adapted to be played on a generally horizontal surface and comprising a missile of self-sustaining resilient material and having a generally elliptical configuration which permits rocking but prevents rolling of the missile along the supporting surface, means for striking a peripheral portion of said missile in a generally downward direction to impart a generally upward translocatory movement for the missile, whereby said missile is moved upwardly through the air and away from the position at which it was struck, and goal means in position for receiving said missile when the latter is properly struck to provide a trajectory of flight terminating at said goal means, said goal means comprising a pair of hingedly connected, complementary enclosures which are movable between on

open position of rest on the playing surface providing a receptacle for said missile and a closed position preventing entry of a missile, a biasing means interconnecting said pair of enclosures to urge said enclosures toward their closed position, and a trigger means within said enclosures and connected with said biasing means so as to normally retain said enclosures in their open position but operative in response to the impact of said missile striking said trigger means to cause said enclosures to snap shut under the action of said biasing means.

3. A game as set forth in claim 2, wherein said missile is hollow and is of a configuration such that it has generally coplanar major and minor axes which are perpendicular to each other, the dimension of said missile at said minor axis being substantially less than the dimension along said major axis.

4. A game as set forth in claim 2, including a plurality of said missiles and a plurality of missile striking means, whereby the game is played between a plurality of players with each attempting to be the first to get his missile in said goal means.

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