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Scott

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[54] **GAME APPARATUS WITH AN ARTICULATED FRAME**

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[52] **U.S. Cl.** .....**273/119 R**, 273/129, 273/127 B, 273/DIG. 8

[51] **Int. Cl.**.....**A63b 67/00**, A63f 9/00

[58] **Field of Search** .....273/1 R, 108–119, 273/123 R, 127 R, 155; 46/1 R

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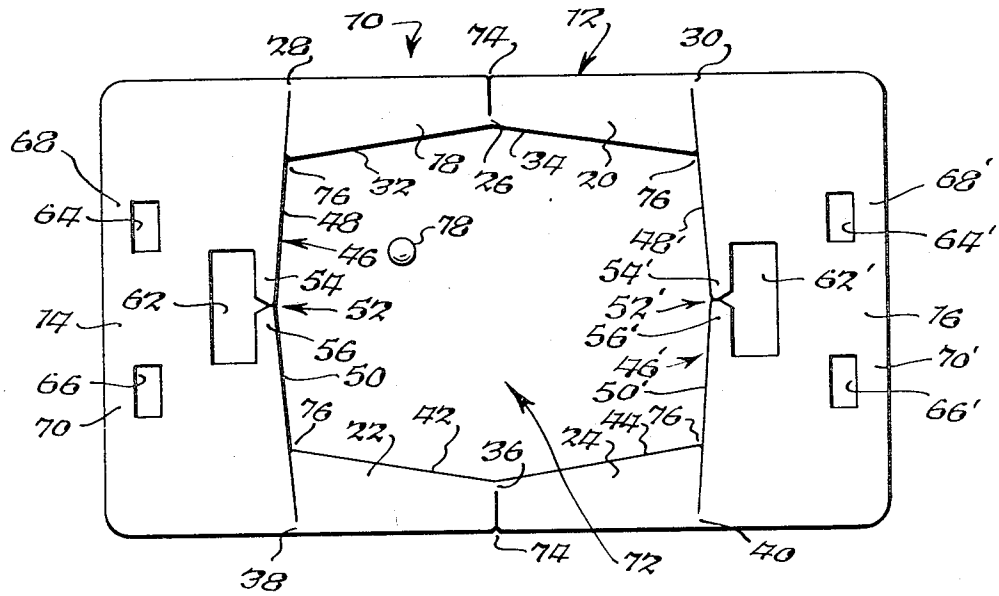
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[57] **ABSTRACT**

An articulated frame of polygonal configuration defining a playing area therein and comprising a plurality of pivotal links movable under the control of the player participants to engage and direct a movable object disposed in the playing area in a desired direction toward an opponent's goal.

8 Claims, 5 Drawing Figures



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SHEET 1 OF 2

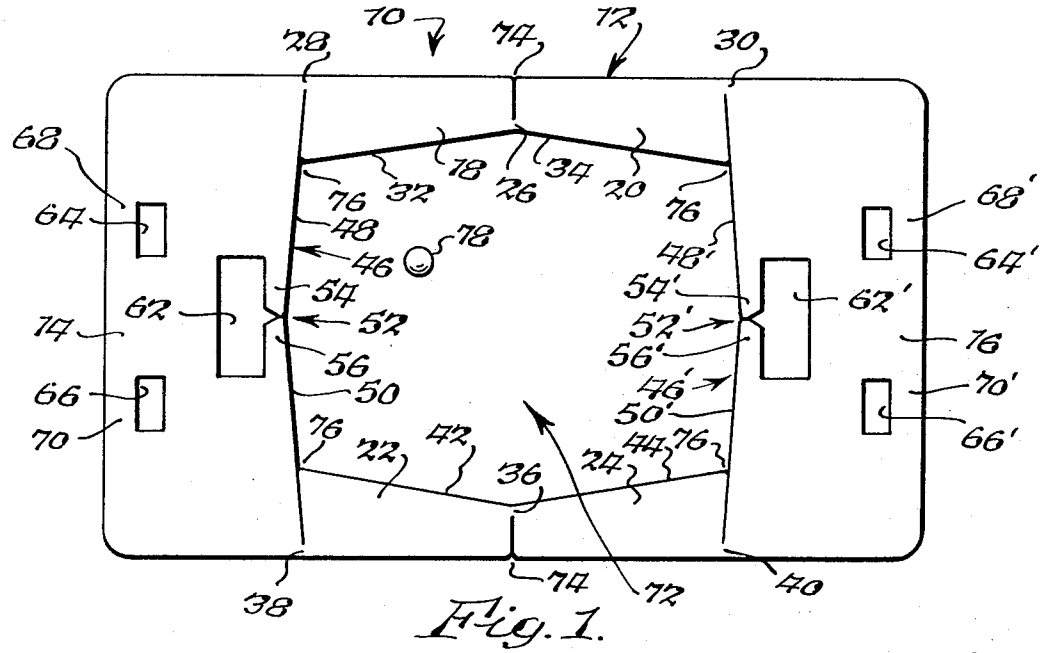


Fig. 1.

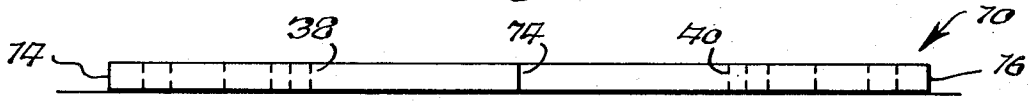


Fig. 2.

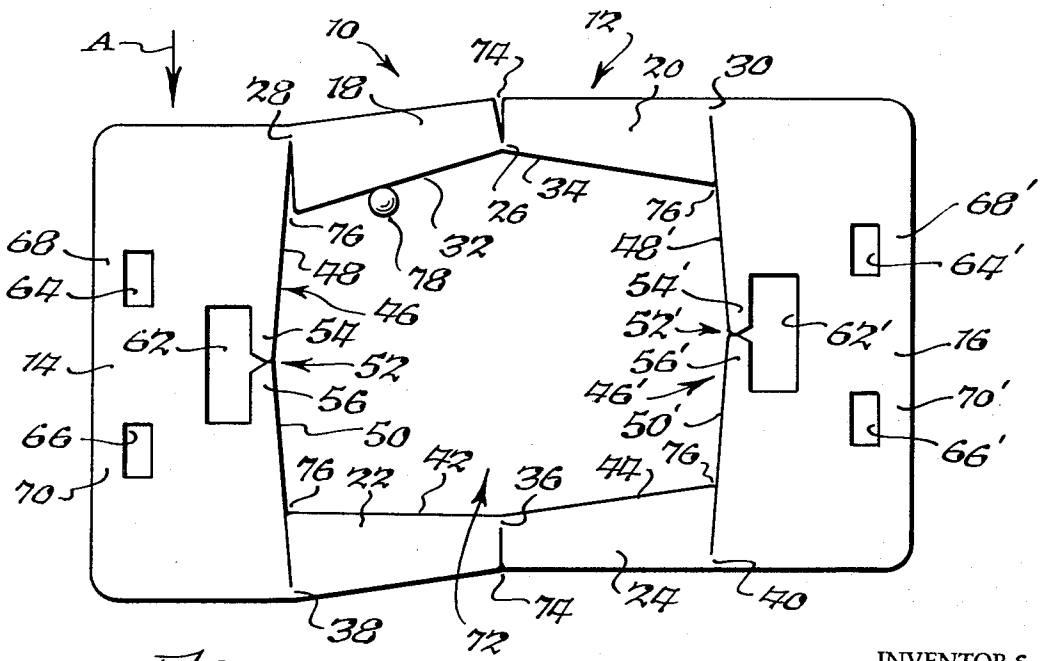


Fig. 3

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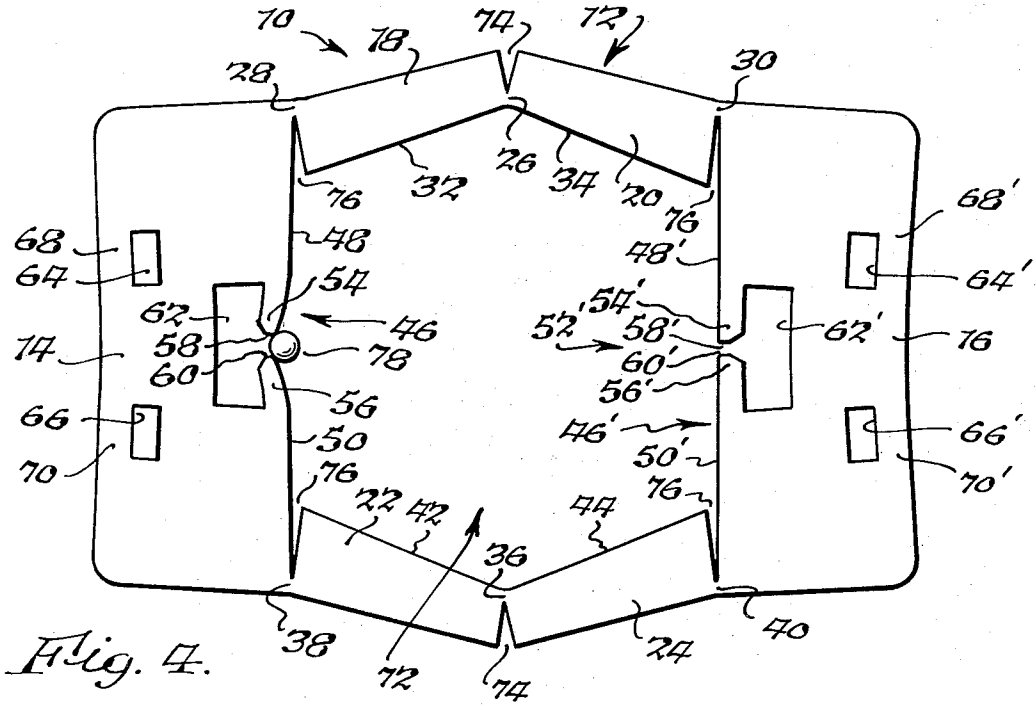


Fig. 4.

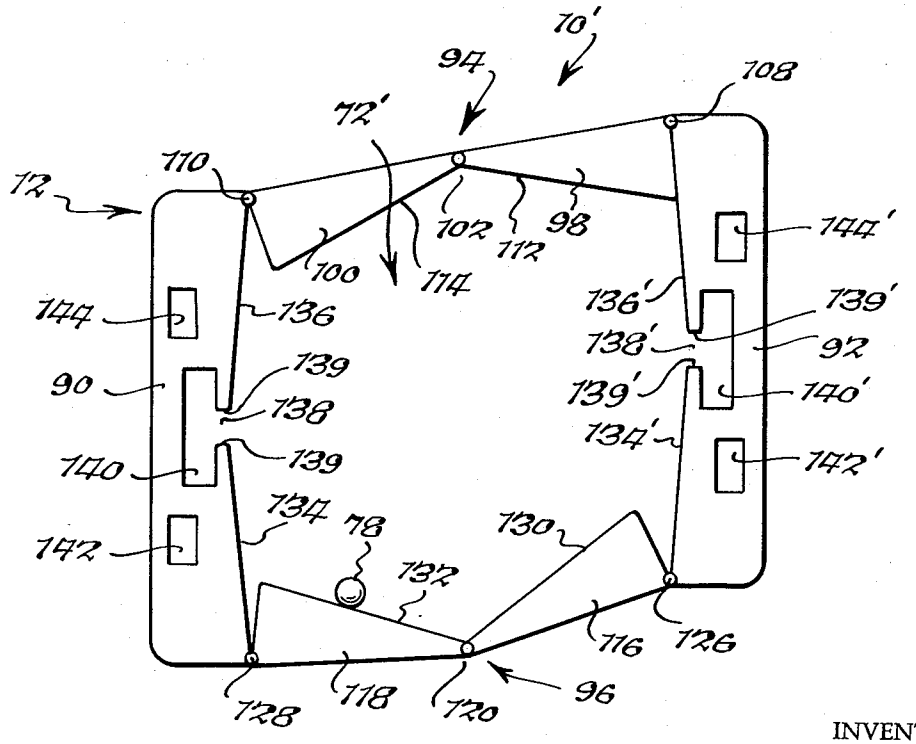


Fig. 5.

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GAME APPARATUS WITH AN ARTICULATED FRAME

BACKGROUND OF THE INVENTION

This invention relates to games played for amusement and, more particularly, to a new and useful articulated tabletop game apparatus.

Various amusement games incorporating movable parts for directing a movable object into one or more pockets or goals are known. Generally, these games fall into two broad classifications, one in which the outcome of the game is dependent entirely on the element of chance, and the other includes some degree of proficiency on the part of the player. The latter is more desirable because it offers a greater challenge whereby the players can exercise their skill to influence the outcome of a competitive game. This invention is directed to apparatus for playing a game of the latter type.

SUMMARY OF THE INVENTION

The present invention provides a game apparatus in the form of an articulated tabletop amusement game which is simple and inexpensive, highly entertaining, stimulates interest and in which the skill of the players is a factor in determining the outcome of the game.

The game apparatus of this invention is characterized by the provision of an articulated frame enclosure of polygonal configuration in plan defining a playing area and consisting of a plurality of pivotal links movable under the control of the player participants to engage and direct a movable object disposed in the playing area in a desired direction toward the opponent's goal.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top plan view of a game apparatus constructed in accordance with this invention;

FIG. 2 is a side elevational view thereof;

FIG. 3 is a view similar to FIG. 1, showing the game apparatus in an articulated position;

FIG. 4 is a view similar to FIG. 3, showing the game apparatus in another articulated position; and

FIG. 5 is a top plan view of another form of game apparatus of this invention.

DETAILED DESCRIPTION OF AN ILLUSTRATIVE EMBODIMENT

Referring now in detail to the drawings, there is shown in FIG. 1 an illustrative embodiment of a game apparatus, comprehensively designated **10**, constructed in accordance with this invention and comprising an articulated body or frame, generally designated **12**, of a generally polygonal configuration in plan adapted to be supported on a tabletop or any other suitable, relatively smooth, supporting surface. Frame **12** comprises a specially configurated pad preferably formed of a lightweight, resiliently yieldable, synthetic plastic foam material, such as polyurethane for example, fabricated in a unitary, one-piece construction having a plurality of pivotal segments hingedly connected together for swinging movement relative to each other. Frame **12** has a generally planar upper and lower surface in substantial parallelism with a constant depth or thickness throughout, as shown in FIG. **2**.

These articulated segments include a pair of longitudinally spaced, bumper members **14** and **16** forming the transverse end portions of frame **12** and extending thereacross. Bumper members **14** and **16** are connected together by two sets or pairs of pivotal links or members **18** and **20** and **22** and **24**, each pair of longitudinally aligned links forming an opposite side of frame **12**. Links **18** and **20** are joined to each other in an end-to-end relation by means of a relatively narrow connecting strip to form a hinge portion **26** which serves as a pivot axis about which links **18** and **20** can pivot or swing relative to each other in the plane of frame **12**. The other ends of links **18** and **20** are pivotally connected to bumper members **14** and **16**, respectively, by means of relatively narrow connecting strips to form hinge portions **28** and **30**, which serve as hinges or pivot axes about which links **18** and **20** swing relative to bumper members **14** and **16** in the plane of frame **12**. Links **18** and **20** are of progressively increasing width from hinge portion **26** to their outer ends, respectively, being provided with inclined inner wall surfaces **32** and **34** which converge toward each other and meet at hinge portion **26**.

In a similar construction, links **22** and **24** are joined to each other in an end-to-end relation by a narrow connecting hinge portion **36**, about which links **22** and **24** can pivot or swing relative to each other in the plane of frame **12**. The other ends of links **22** and **24** are pivotally connected to bumper members **14** and **16** by means of narrow connecting hinge portions **38** and **40** about which links **22** and **24** can pivot relative to bumper members **14** and **16** in the plane of panel **12**. Links **22** and **24** are provided with inclined inner wall surfaces **42** and **44** which converge toward each other and meet at hinge portion **36**, the width of links **22** and **24** progressively increasing from hinge portion **36** outwardly toward their respective outer ends.

Bumper member **14** is provided with an inner wall **46** separated into two portions having tapered or inclined surfaces **48** and **50** by a restricted inlet **52**, the sloping portions **48** and **50** converging toward each other and terminating at restricted inlet **52**. Inlet **52** is defined by a pair of abutting projections **54** and **56** having adjacent surfaces **58** and **60** (FIG. 4) partially abutting each other and then diverging away from each other and leading into a rectangularly shaped opening extending transversely through the pad or frame **12** and defining a goal **62** in bumper member **14** for a purpose that will presently become apparent. Two laterally spaced slots **64** and **66** are provided in bumper member **14** for the reception of a player's fingers, the connecting portions remaining between such slots and the outer end wall of bumper member **14** serving as hand grips **68** and **70** for manipulating bumper member **14** and thereby the other articulating parts during the course of the game. Since bumper member **16** is identical in construction to member **14** and functions in a similar manner, the same reference characters primed are used to identify similar parts.

The central open space enclosed by frame **12** and defined by the inner wall surfaces **32, 34, 42, 44, 46** and **46'** constitutes the playing area **72** of apparatus **10**, the plan configuration of which can be continually changed during the course of the game by shifting bumper members **14** and **16** to swing the pivotal links

18, 20, 22 and 24 in a manner typically shown in FIGS. 3 and 4.

The pad or frame 12 can be formed by a suitable molding operation or it can be formed by stamping a generally rectangularly shaped blank out of a strip of synthetic plastic foam material, such as polyurethane for example. During the same or subsequent stamping operation, portions are removed from the blank to provide the goals 62 and 62', slots 64, 64', 66 and 66' and the large central playing area 72. The relatively thin strip of material between goals 62 and 62' and playing area 72 is slit to form inlets 52 and 52'. Also, the blank is partially slit at the opposite sides thereof, as at 74, to form the relatively narrow hinge portions 26 and 36 and in the inner corners defined by the links and the bumper members, as at 76, to form hinge portions 28, 30, 38 and 40. The cutting or stamping tool is directed in a path of movement at right angles to the plane of the blank so that all edges are oriented generally normal to the planes of the upper and lower surfaces of pad 12, which has a uniform thickness throughout.

The game apparatus 10 of the present invention includes at least one lightweight ball member 78, preferably made of wood or plastic used in conjunction with frame 12 and positioned in the playing area 72. In playing the game, frame 12 is placed on a relatively smooth tabletop or supporting surface to reduce rolling friction between ball member 78 and such surface and to minimize friction between the latter and the articulating parts of frame 12. The game is played In by two players positioned at opposite ends of frame 12 for controlling the movements of bumper members 14 and 16. Each player can insert the fingers of his hands in slots 64 and 66 with the palms thereof engaging grips 68 and 70 for ease of manipulating his respective bumper member.

The object of the game is to shift the pivotal bumper members 14 and 16 in any horizontal direction so as to strike ball member 78 by the vertical surface of wall 46 or effect actuation of links 18–24 to move their vertical surfaces into engagement with ball member 78 in a manner directing ball member 78 into the opponent's goal while blocking or preventing entry of ball member 78 into the player's own goal. Although the bumper elements 14 and 16 and links 18–24 are formed of a plastic foam material, they are sufficiently rigid to propel the lightweight ball member 78 when moved into engaging contact therewith. Articulating bumper elements 14 and 16 and links 18–24 form an articulated enclosure and are rapidly moved under the control of the player participants into an almost infinite variety of positions during the course of play whereby the polygonal configuration of frame 12 is constantly varied, as shown in FIGS. 3 and 4 for example.

FIG. 3 illustrates one position of articulated frame 12 in which bumper element 14 has been shifted in the direction of arrow A to swing link 18 about hinge 26 to bring surface 32 into contact with ball member 78 in an effort to propel it toward inlet 52'. A certain degree of proficiency can be developed in shifting bumper elements 14 and 16 to in turn pivot links 18–24 in such a manner as to carom moving ball member 78 in a course leading to the inlets of goals 62 and 62'. When ball member 78 is propelled under sufficient force into the region of inlet 52, the inherent flexibility of projections 54 and 56 causes them to yield inwardly under the impact of ball member 78, as shown in FIG. 4, allowing the latter to enter goal 62. Because of the resiliency of the material of which projections 54 and 56 are formed, they will return to their original shapes and positions after being temporarily deformed by ball member 78 so as to provide a barrier for goal 62 and impede the entry of ball member 78 during a subsequent play.

If desired, a plurality of ball members 78 can be used simultaneously with those received in goal 62 being captively held therein until the finish of a play. Also, a puck or disc or any suitable movable object can be used in lieu of a ball member, if desired. It should be understood that any number of game objectives, each having predetermined rules, are envisaged by the game apparatus of this invention.

While frame 12 preferably is in the form of a pad composed of synthetic plastic foam material in a unitary, one-piece construction, it should be understood that the present invention contemplates the use of a plurality of separate, discrete elements pivotally joined at their adjacent ends to form a polygonal configurated linkage arrangement in plan which functions similarly to frame 12 described above. To this end, FIG. 5 illustrates another form of game apparatus, generally designated 10', comprising a plurality of pivotal segments, formed of a lightweight, rigid, inelastic, shape-sustaining material, adapted to be hinged at their respective opposite ends for swinging movement relative to each other forming an articulated frame 12'.

These pivotal segments include a pair of longitudinally spaced and generally opposed bumper members 90 and 92 connected together by a pair of linkage assemblies 94 and 96. Linkage assembly 94 comprises a pair of generally triangularly shaped links or pivotal members 98 and 100 hingedly connected at their inner ends or apices for swinging movement relative to each other about a generally vertical axis defined by a common hinge 102. The wider ends of links 98 and 100 are pivotally connected to bumper members 90 and 92 adjacent their one opposite ends for relative pivotal movement about vertical axes defined by hinges 108 and 110. The inner side walls of links 98 and 100 define inclined abutment surfaces 112 and 114 for engagement with ball member 78 to propel and guide the latter in a desired direction.

Linkage assembly 96 is similar to assembly 94 and comprises a pair of generally triangularly shaped links 116 and 118 hingedly connected at their inner, narrow ends by means of a common hinge 120. The outer, wider ends of links 116 and 118 are pivotally connected to the other opposite ends of bumper members 90 and 92 by hinges 126 and 128. The inner side walls of links 116 and 118 are provided with inclined abutment surfaces 130 and 132 engageable with ball member 78.

Bumper member 90 has an inner wall separated into two sections provided with slightly tapered or inclined surfaces 134 and 136 converging toward each other and terminating at a restricted inlet 138 defined by two opposed projections 139 facing each other. Inlet 138 leads into a generally rectangularly shaped opening extending through bumper member 90 and defining a goal 140 in bumper member 90. A pair of laterally

spaced, rectangularly shaped openings **142** and **144** are provided in bumper element **90** for gripping the latter in the same manner hereinbefore described in connection with the form of the invention illustrated in FIGS. **1–4**. However, any suitable handles or hand grips can be secured to bumper element **90** in lieu of openings **142** and **144**, if desired, within the purview of this invention. Bumper member **92** is identical in construction to bumper **90** and the same reference numerals primed are applied to similar parts.

As in the form of the invention first described, frame **12'** encloses an open space **72'** defining the playing area of game apparatus **10'**. A ball member **78** also is used in conjunction with apparatus **10'**, the objective being to manipulate bumper members **90** and **92** and thereby activate links **98**, **100**, **116** and **118** in such a manner as to direct ball member **78** into the opponent's goal.

The present invention thus provides a game apparatus in the form of a tabletop amusement game comprising an articulated enclosure consisting of a plurality of pivotal segments movable under the control of the players to engage and direct a movable object in a desired path toward the opponent's goal. The skill of the players in manipulating the pivotal segments is instrumental in determining the outcome of the game.

Preferred embodiments of this invention having been disclosed in detail, it is to be understood that this has been done by way of illustration only.

I claim:

1. An amusement game comprising: a frame consisting of a plurality of pivotal members, means pivotally connecting the ends of each pivotal member to the ends of adjacent pivotal members to form an articulated enclosure of polygonal configuration in plan and defining a relatively large open space therein, a movable object positioned on a supporting surface within said space, said pivotal members having inner surfaces adapted to engage said movable object upon actuation of said articulating enclosure, two of said pivotal members being arranged in a generally opposed relation and having inner surfaces formed with inlets therein leading into openings formed in said opposed pivotal members and defining opposing goals.

2. An amusement game according to claim **1** wherein said frame is formed of a resiliently yieldable, synthetic, plastic material in a unitary, one-piece construction, whereby said pivotal members are formed integral with each other.

3. An amusement game according to claim **1** wherein said pivotal means comprise hinge portions of reduced widths extending normal to the plane of said frame and interposed between adjoining pivotal members.

4. An amusement game according to claim **1** wherein said opposed pivotal members are provided with gripping means for manipulating said pivotal members to effect actuation of said articulated enclosure.

5. An amusement game according to claim **1** wherein said inlets are defined by resiliently yieldable opposed portions normally abutting each other but yieldable upon contact by said movable object to define an opening permitting passage of said movable object therethrough.

6. An amusement game according to claim **1** wherein said pivotal members comprise links formed of a rigid, shape-sustaining material, and said pivotal means comprises hinges connecting the ends of each link to the ends of adjacent links for relative swinging movement in the plane of said frame.

7. An amusement game according to claim **6** including gripping means on said opposed pivotal members for manipulating said opposed pivotal members to effect actuation of said articulated enclosure.

8. An amusement game according to claim **6** wherein said inlets are defined by opposed portions formed integral with said opposed pivotal members along the inner edges thereof.

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