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[54] **GAME STRUCTURE AND METHOD**
 10 Claims, 4 Drawing Figs.

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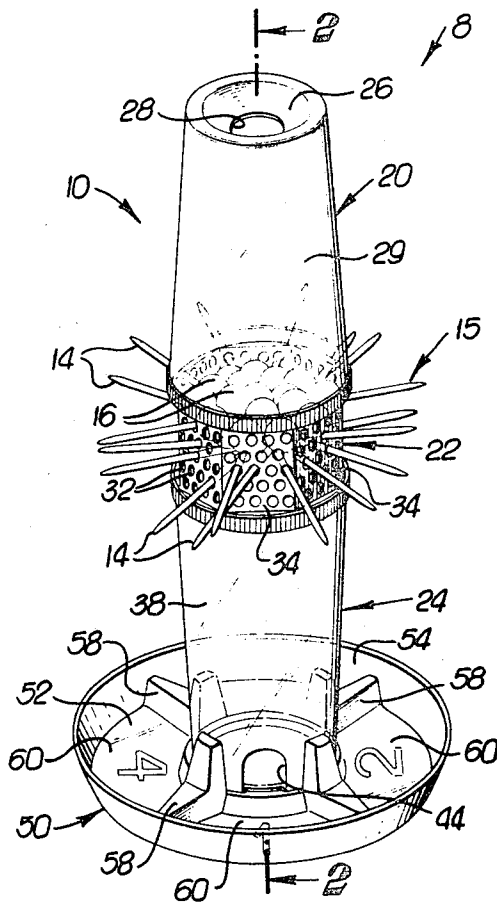
[50] Field of Search..... 273/1, 120;
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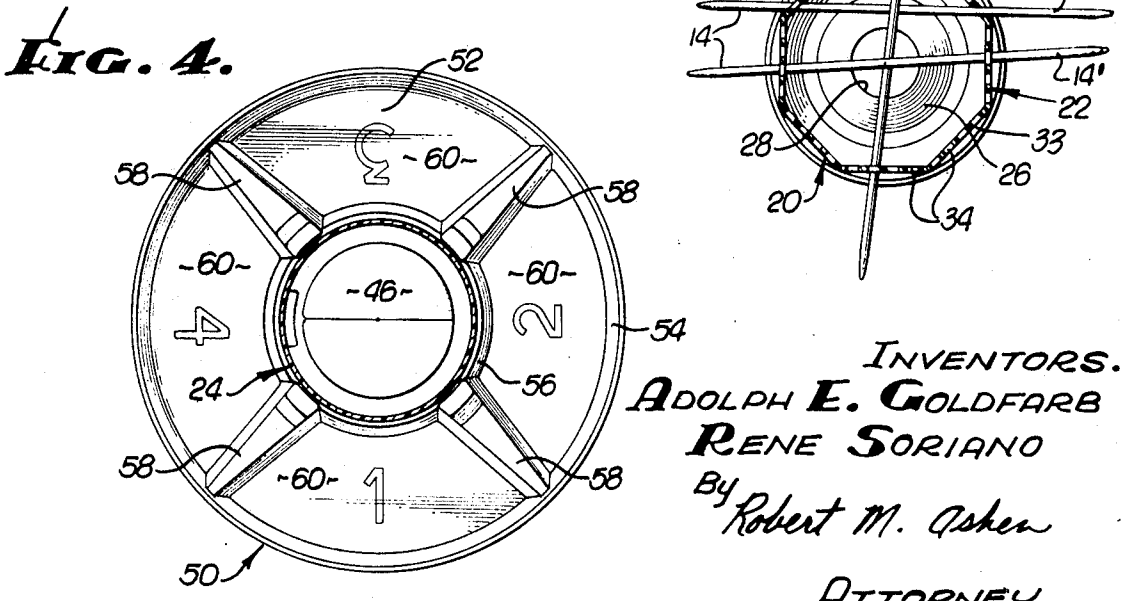
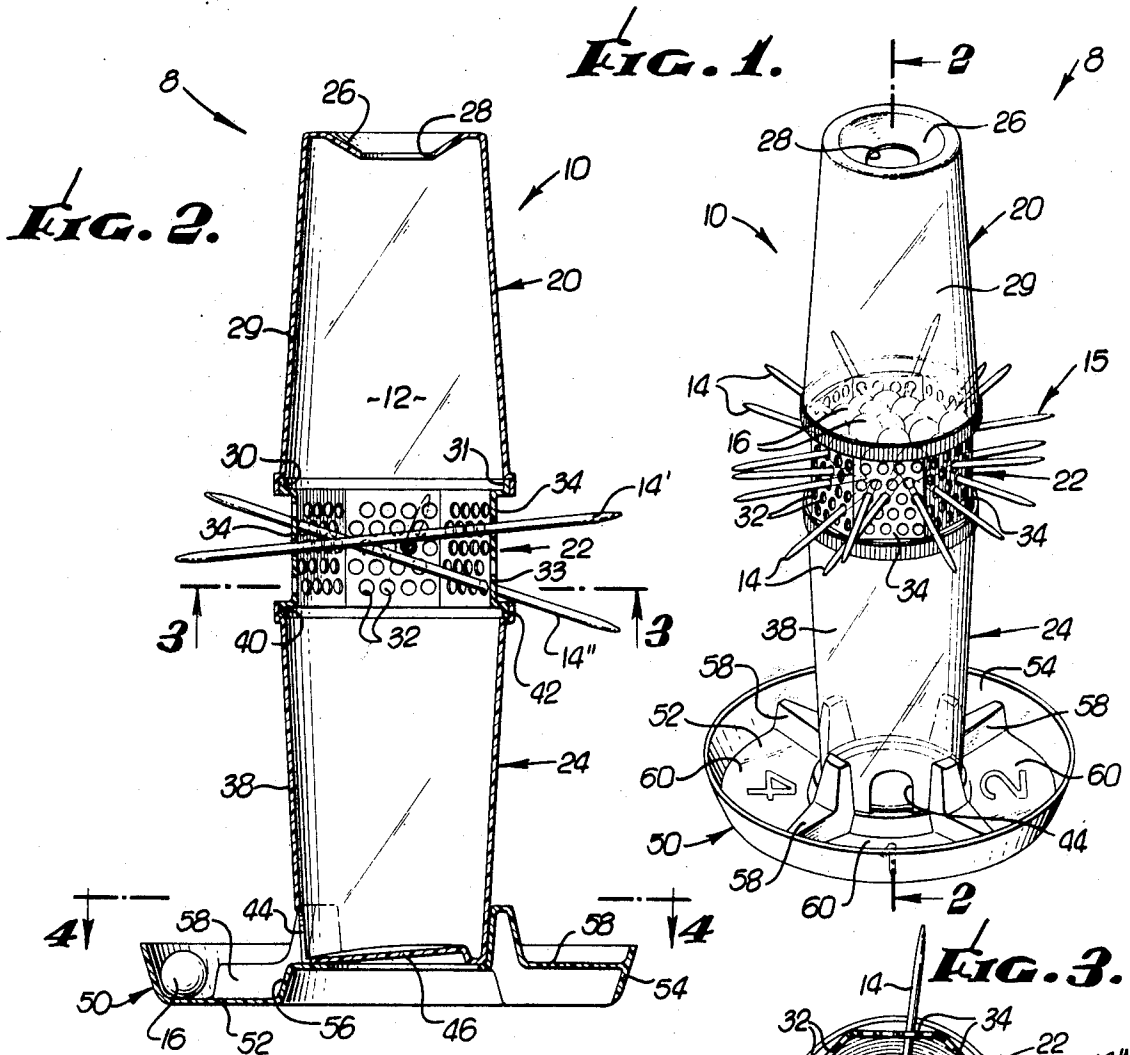
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ABSTRACT: A game comprising a hollow upright transparent conduit having a plurality of apertures in an intermediate section to releasably receive and support a plurality of rods which form a variable interdependent network barrier across the conduit. The rods support a plurality of discrete objects such as marbles, and the players of the game remove the rods one at a time, with each endeavoring to remove a rod in accordance with a game objective such as not permitting any marbles to fall through the barrier. The objects are of such a size with respect to the conduit that at least two rods are necessary to prevent passage of the objects. A method of playing a game comprising positioning a plurality of rods to form a network barrier across a flow path; positioning a plurality of objects upstream of the flow path above the barrier; and selectively removing the rods successively to control the passage of objects past the barrier.





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GAME STRUCTURE AND METHOD

In recent years there has been growing demand for games which are not only amusing for younger children, but are suitable for older children and adults at a higher, more sophisticated level. Such a game is desirably simple to operate for younger children, while being sufficiently responsive to manual and intellectual skills to afford interesting competition between older players. It is also desirable that the game offer drama and excitement in its play. Another objective is that the game be relatively inexpensive to produce.

The present invention contemplates a new and improved game which is responsive to the manual and intellectual skills of the players; offers excitement and drama in its play; and can also be played by younger, unsophisticated children. It is an object of the present invention to provide apparatus and method for play of such a game. A presently preferred embodiment of such a game comprises an upright, transparent conduit which defines a generally vertically extending passageway or flow path with an entrance at the upper end of the conduit and an exit at the lower end of the conduit. The conduit includes means at an intermediate control section, for releasably supporting a plurality of control elements across the flow path; the means are in the form of a plurality of closely spaced apertures disposed all around the circumference of the conduit at the control section, and the control elements are elongated rods or sticks. The rods are inserted through pairs of apertures to form a variable collective and interdependent barrier across the flow path. There are a large number of apertures and each aperture may combine with one of a number of generally opposed apertures to support a rod; therefore the rods can be supported to provide almost an infinite variety of different barriers. A plurality of discrete objects such as marbles or balls, may be inserted through the entrance into the flow path and supported by the barrier. The relatively large size of the flow path at the control section, and the relatively small ball diameter and cross section of the rods, insures that the blockage of the flow path and the support of the objects is dependent on the collective presence and functioning of a number of rods. The players take turns removing rods one at a time. The conduit may be associated with a multireceptacle base and the conduit may be selectively moved, at each player's turn, to position the exit to discharge into a receptacle associated with the player whose turn it is to remove a rod. This provides a visual, automatic showing of the balls a player has permitted (or caused) to pass through the barrier. The players endeavor to selectively remove rods so as to control passage of balls through the barrier in accordance with a particular game objective. This objective may be to minimize passage of all balls, or it may, for example, be to prevent passage of certain colored or designated balls. Play of the game provides excitement and suspense.

In the drawings:

FIG. 1 is a perspective view of a game apparatus in accordance with the present invention.

FIG. 2 is a vertical section taken generally along plane 2-2 of FIG. 1.

FIGS. 3 and 4 are horizontal sections through the apparatus of FIGS. 1 and 2, taken generally along planes 3-3 and 4-4 respectively.

The presently preferred form of game 8, which is illustrated in FIGS. 1 through 4, and embodies the invention, includes a hollow upright conduit 10, defining a vertical passageway or flow path 12, a plurality of control rods or means 14, for forming a variable interdependent network barrier 15 across the passageway 12, and a plurality of discrete objects or means such as marbles 16 whose movement past the barrier is controlled by selective removal of the control rods.

In the play of the game 8, the players take turns, first positioning the rods and then, after the marbles are in position, removing the rods. Each player will try to achieve a particular game objective. The game permits of many variations in its play. The marbles and rods may be all the same, or they may be divided into different groups or classes by color, by number or indicia, or by sizes, shapes and the like. Where there are

such differences, some may be assigned different scoring values, and some may be positionable and/or removable in certain order or by certain players. It may even be the object to permit the maximum number of marbles to pass the barrier. All such play possibilities are considered as "controlling" movement of the objects past the barrier.

The conduit 10 may be of any suitable length and cross section, and it may be constructed of any suitable material such as transparent or clear hard plastic. The transparency of the conduit is desirable to permit the players to view the rods 14 and the marbles 16.

The illustrated conduit or column 10 is adapted to be self-standing in an upright position so that the passageway 12 extends vertically. This orientation causes all of the marbles 16 to tend to move directly along the passageway generally normal to the barrier 15 under the force of gravity.

The conduit 10 includes an upper or entrance section 20, an intermediate support or control section 22, and a lower exit section 24.

The entrance section 20 is generally tubular but has a slight outward taper from top to bottom. It has a transverse top wall 26 that is provided with a central aperture or entrance 28 for the objects or marbles 16. The top wall 26 is dish-shaped to guide marbles toward the entrance 28. The entrance section 20 also includes a sidewall 29 which defines an upper or entrance region of the passageway 12. The conduit 10 may be unitary or formed from vertical half sections, or it may be formed, as shown in the drawings, by interconnecting separate entrance, control and exit sections 20, 22 and 24. Thus, the illustrated entrance section 20 is formed with a rim around its lower end which defines an annular recess 30 for receiving a mating rim 31 around the upper edge of the control section 22.

The control section 22 comprises an upright sidewall 33 that defines a support or control region of the passageway 12. The sidewall 33 is provided with a plurality of small openings or apertures 32 around its circumference. The apertures provide the means which releasably receive and support the control rods 14. As shown in the drawings, in the illustrated construction the control section sidewall 33 has equal flat sides or panels 34 and the apertures 32 are circular and closely spaced to one another. Each side or panel 34 has five horizontal rows of four apertures 32, with alternate rows being offset. Opposite panels 34 have their apertures 32 arranged in a corresponding manner so that each aperture is paired with an oppositely positioned aperture. This arrangement, while desirable, may be modified in selected ways as by suitably varying the number, size and shape of panels or by making the control section cylindrical or otherwise curved, or by suitably varying the size, shape, number and placement of the apertures. It is desirable that the apertures be close enough together and in sufficient number to permit a suitable network barrier of rods to be formed which will support the marbles and to preferably also provide a selection or alternatives in the placement of the rods.

While the illustrated configuration of control section is symmetrical in terms of the panels and apertures, it will be apparent from viewing the structures and the drawings, that the rods may be positioned through pairs of apertures other than opposite pairs. Thus, for example rod 14' is shown extended through a pair of apertures at different heights while rod 14'' is shown extended through apertures in other than opposite panels. Further, the control section need not be symmetrical and panels and apertures may be of various sizes, shapes and arrangements.

The control rods, elements or means 14 are elongated thin sticks of a suitable cross section to pass through the apertures 32 and of a suitable length to be releasably supported by extending through the apertures across the control section 22. Preferably the control rods 14 are long enough to extend through opposite pairs of apertures 32 with enough added length to permit them to be grasped by the players. As with the apertures, the control rods may be all the same or they may be

of various colors, cross sections, lengths, etc. The illustrated control rods 14 are made of a plastic material having some flexibility which permits them to be positioned through a larger number of aperture pairs because they can be bent to pass around other rods and to reach apertures outside the reach of a rigid rod extended through a given aperture. At the same time, the control rods should have sufficient rigidity to collectively support the marbles or other objects, although this is dependent on the weight of the objects, the thickness and spacing of the rods, etc.

The discharge or exit section 24 is connected to and in communication with the control section 22 to receive marbles or objects from that latter section 22 and deliver them out of the conduit 10. The illustrated exit section 24 is shaped generally like the entrance section 20, being generally elongated and tubular with a slight inward taper toward its lower end. Thus, the exit section 24 has a sidewall 38 defining an exit region of the passageway 12. A rim around the upper edge of the illustrated exit section 24 defines an annular internal recess 40 which receives a rim 42 around the lower edge of the control section 22 for assembly of the sections. The exit section 24 has an exit or opening 44 through the lower edge portion of the section and a floor or bottom wall 46 which is formed with a slight incline downward toward the exit 44 for causing the marbles to roll toward the exit. The exit 44 is suitable size and shape for passage of at least one marble or object therethrough.

The conduit 10 may be provided with a base 50 such as shown in the drawings on which the conduit is freely standing. The illustrated base 50 is generally dish shaped, having a bottom wall 52, an outer rim 54 around the edge of the wall 52, and a central hub 56 for supporting the conduit 10. The base 50 includes radial wall means 58 for dividing the base into player sections 60 and also providing lateral support to the conduit.

The conduit may be rotated as desired to position the exit 44 to deliver marbles to any selected play section 60.

The illustrated objects 16 are, as noted above, ordinary spherical glass marbles. The weight and spherical shape of the marbles facilitates their passage through the network of control rods 14 as selected rods are removed. Further, the marbles 16 cooperate with the rods 14 to wedge against one another and against the rods to create a delicate interbalance and interdependence between the rods and the marbles. This makes it quite difficult to anticipate the effect of removing particular rods, and enhances the excitement and suspense of the game.

While it is advantageous that the objects be spheres or balls which have a density at least as great as glass, the objects could be other selected shapes and materials, and as noted above, they may be all the same or in two or more different forms, sizes, colors, etc. Similarly, the control rods could be all the same or in two or more different forms, sizes, colors, etc. It is only significant that the objects tend to move through the network barrier of rods, and that the control rods or means form such a variable network barrier that is collective in that a substantial number of the individual control means are required to reduce the size of all openings in the barrier below the size of the smallest object. While the last mentioned condition is dependent on the conduit cross section as well as the object size and shape, in general it appears that at least 8-10 rods are usually required to so completely block the barrier of the illustrated game 8.

As will now be apparent, to play the game, the control rods 14 are first positioned through pairs of apertures 32 to form the collective interdependent network barrier (positioning the rods may be made a part of the game play by giving the players turns to strategically place the rods) and then the marbles 16 are amassed on the barrier by inserting them through the entrance 28. The players then take their turns removing control rods 14 in a manner to achieve the game objective. In the illustrated form of game where the objective is to remove rods without permitting marbles to fall through the barrier, the conduit 10 is positioned before each player's turn with the exit

44 leading to the player section 60 of that player. Obviously, as more and more rods are removed, the barrier will be varied and openings or paths created through which one or more marbles 16 pass. The marbles which pass the barrier when a rod is removed, fall to the bottom of the column or conduit 10, roll down the inclined floor 46 to the exit opening 44, and are deposited in the player section 60 of the base 50 to which the exit is turned, which is the section belonging to the player who has just removed a rod. This provides an automatic count on the number of marbles each player has allowed to fall. The player with the fewest number of marbles in his section is the winner. Alternatively, certain marbles or objects may be marked or colored for higher or lower value. Then the player with the lowest score of marble values is the winner rather than the player who merely has the fewest number of marbles.

Thus, a simple yet fascinating game is provided by the illustrated device. Skill is combined with excitement and suspense. The illustrated game is durable, lightweight, inexpensive to manufacture, and can be packaged and stored in minimum space.

While rods insertable through apertures provide a simple, strong and versatile arrangement, the control means might assume other selected forms such as, for example only, slats receivable in slots. The rods may be made of suitable material other than plastic and might be curved or otherwise shaped than straight.

Other modifications and changes can be made in the illustrated game structure without departing from the spirit and scope of the present invention.

Various features of the invention are set forth in the following claims.

We claim:

1. A game structure for building a removable network barrier of rods to support a plurality of discrete objects and then selectively and successively removing the rods from the support barrier to control the release through the barrier of the objects, said structure comprising the combination of:
 - a. a plurality of elongated support rods; and
 - b. a hollow, upright structure having a sidewall which includes a support section with a plurality of apertures smaller than the discrete objects for releasably receiving and supporting said support rods extending across the support section to form an interdependent, collective variable network barrier for supporting a plurality of discrete objects, said structure also including means defining an entrance into the structure at least as large as one of the discrete objects for introducing discrete objects above the barrier, none of said support rods being capable of individually restricting all openings through the barrier to less than the size of one of said discrete objects;
 - c. a plurality of discrete objects adapted to be releasably supported on the network barrier formed by the support rods, said objects being of substantially smaller dimension than the transverse cross section of said support section, whereby incident to the play of the game, the players take turns in strategically removing the rods so as to achieve a game objective such as limiting the passage of objects through the barrier.
2. A game structure as defined in claim 1, wherein said discrete objects are generally spherical in shape and have a density at least as great as glass.
3. A game structure as defined in claim 1, wherein the apertures are so arranged and the rods and objects are so proportioned that at least about 6 to about 10 rods are required to form a barrier having no openings therethrough large enough for passage of an object.
4. A game structure as defined in claim 1, wherein the apertures are arranged at relatively close intervals and in generally opposing pairs, with there being substantially more pairs of apertures than there are rods to afford a variety of possible support positions for the rods.
5. A game structure as defined in claim 1, wherein at least a portion of said upright wall is transparent.

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6. A game structure as defined in claim 1 wherein said upright structure has a bottom wall and said entrance is located above the support section, an exit section which is located below the support section having at least one exit opening adjacent said bottom wall, said bottom wall being inclined toward said exit opening, at least a portion of said sidewall at said support section being transparent, said game structure also inclining a base structure for supporting the upright structure and having wall means that define at least two separated player areas for receiving the discrete objects from the exit opening, the upright and base structures being movable relative to one another to selectively align the exit opening with any one of said player areas.

7. A game comprising, in combination:

- a. a structure defining a flow path therethrough, which includes a control section, said flow path being adapted to receive for movement therealong a plurality of discrete objects of substantially smaller size than the cross section of said control section, and
- b. a plurality of control elements, said control section including means for releasably supporting a plurality of said control elements in the flow path at the control section so as to form a variable barrier across the flow path to control movement along the path of the discrete objects, none of said control elements being capable of individually restricting all openings through the barrier to less than the size of one of said discrete objects, said structure also including means defining an entrance into the structure at least as large as one of the discrete objects into the flow path upstream of the barrier,
- c. a plurality of discrete objects of substantially smaller size than the cross section of said control section, whereby, incident to play of the game, the players selectively remove individual control elements from said control section to vary the barrier and thereby control the move-

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ment of the objects past the barrier.

8. A game as defined in claim 7, wherein said discrete objects are in the form of balls.

9. A toy comprising a structure defining a generally vertical flow path which includes:

- a control section,
- a plurality of discrete objects of substantially smaller size than the cross section of said control section, said objects being adapted to move along said flow path, and
- a plurality of removable control elements releasably supported across the flow path at the control section so as to form a variable collective and interdependent barrier across the flow path adapted to control movement along the flow path of discrete objects, none of said control elements being capable of individually restricting all openings through the barrier to less than the size of one of said discrete objects.

10. A method for playing a game comprising:

- a. selectively and successively, releasably positioning control elements in given region of a flow path for discrete objects to collectively form a variable network barrier across the flow path, the objects being of substantially smaller size than the cross section of the flow path at said given region, none of said control elements being capable of individually restricting all openings through the barrier to less than the size of one of said discrete objects,
- b. positioning a plurality of discrete objects immediately upstream of the positioned control elements so that the network barrier prevents the objects from continuing downstream, and
- c. selectively and successively removing control elements from their said positions in the flow path to control the passage of the discrete objects past the given control region of the flow path.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,578,320 Dated May 11, 1971

Inventor(s) Adolph E. Goldfarb, et al

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

IN THE CLAIMS

Claim 6, line 8: change "inclining" to ---including---

Signed and sealed this 21st day of December 1971.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

ROBERT GOTTSCHALK
Acting Commissioner of Patents