

Jan. 29, 1963

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3,075,770

PUZZLE GAME

Filed Aug. 1, 1961

2 Sheets-Sheet 1

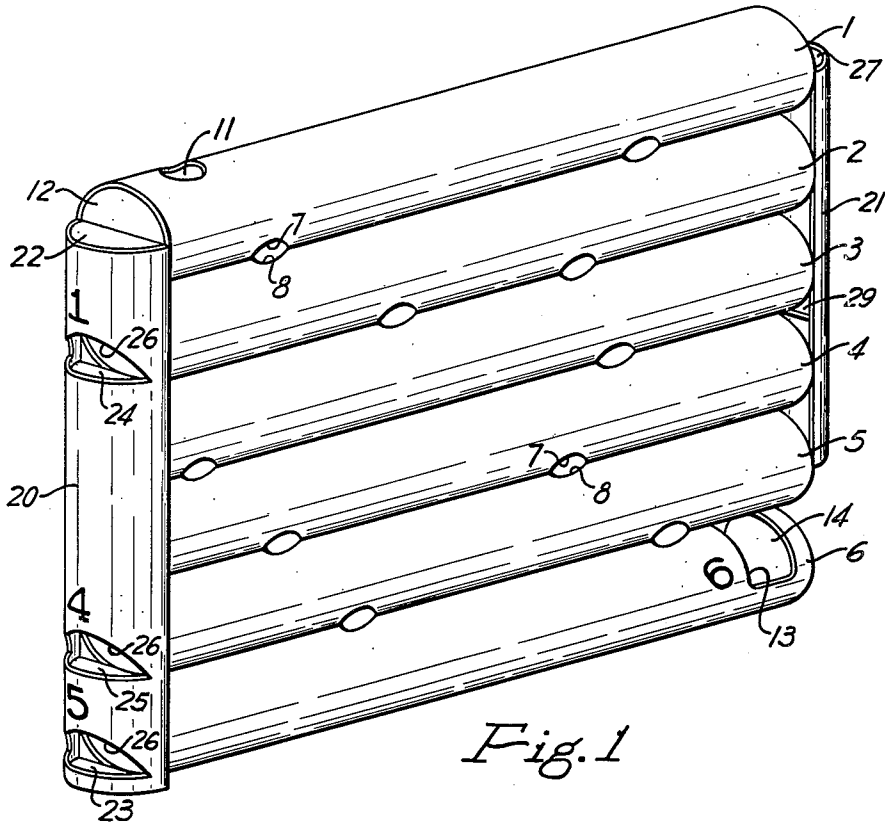


Fig. 1

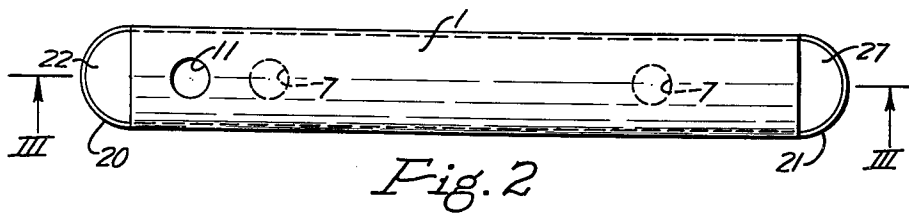


Fig. 2

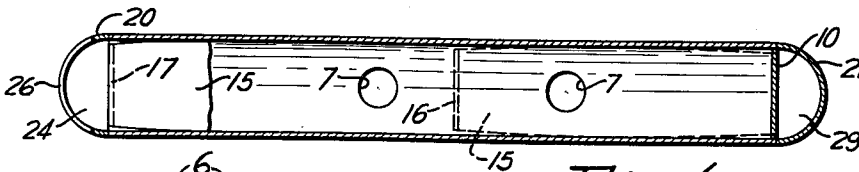


Fig. 4

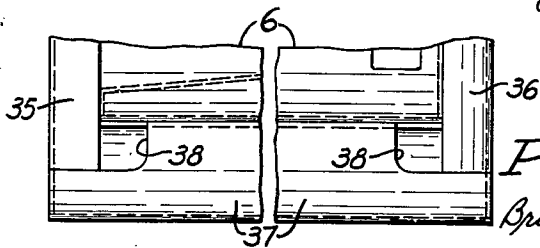


Fig. 8

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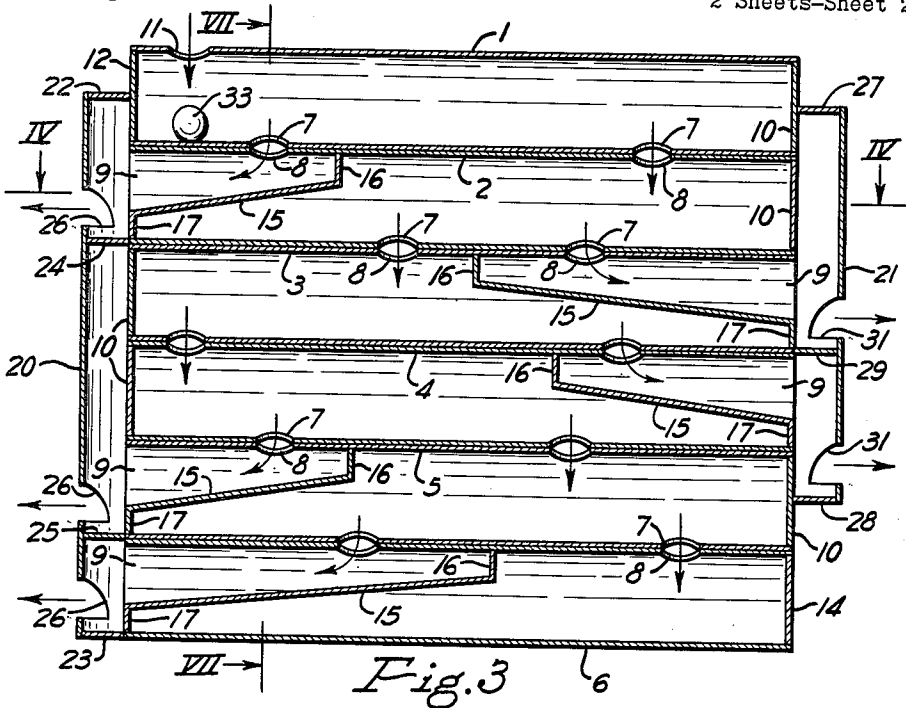


Fig. 3

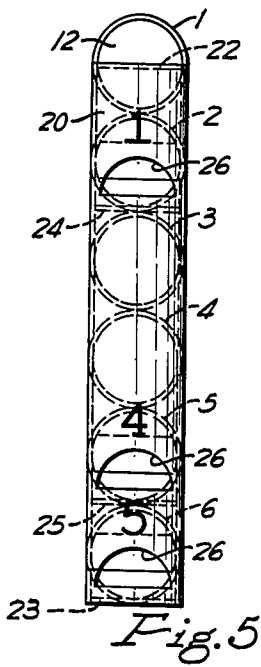


Fig. 5

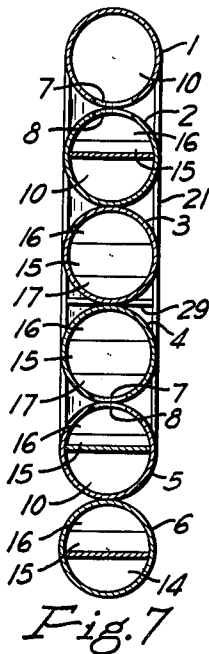


Fig. 7

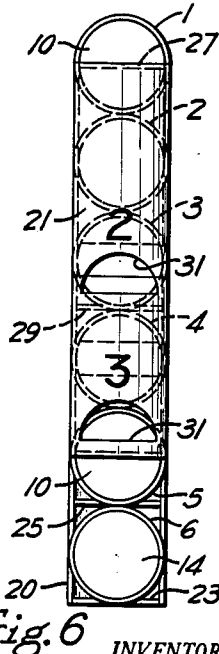


Fig. 6

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PUZZLE GAME

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7 Claims. (Cl. 273-109)

This invention relates to puzzle games, and more particularly to those in which a ball is rolled through a maze.

It is among the objects of this invention to provide an interesting puzzle game, which is played or solved by manipulating it in the hands, which is attractive in appearance, and which is inexpensive to make.

In accordance with this invention, several rigid horizontal playing tubes are mounted on top of one another in a common vertical plane to form a stack. Each adjoining pair of tubes has at least two longitudinally spaced pairs of registering holes connecting them. Each tube below the top tube also has an outlet opening at one end, some of the openings being at one end of the stack and the rest at the opposite end. The top tube is provided with an entry opening for a ball, and the bottom tube has an exit opening. Secured to the ends of the stack are receivers that communicate with the adjacent outlet openings. To play this game, a ball of a size that can pass through all of the holes and openings is inserted in the entry opening and the tubes are tilted back and forth to try to cause the ball to drop from one tube to the next until it reaches the exit opening, without falling out of one of the outlet openings into one of the receivers.

The invention is illustrated in the accompanying drawings, in which:

FIG. 1 is an isometric view of my puzzle game;

FIG. 2 is a plan view thereof;

FIG. 3 is a vertical longitudinal section taken on the line III—III of FIG. 2;

FIG. 4 is a horizontal section taken on the line IV—IV of FIG. 3;

FIG. 5 is a view of the left-hand end of the game;

FIG. 6 is a view of the right-hand end;

FIG. 7 is a vertical cross section taken on the line VII—VII of FIG. 3; and

FIG. 8 is a fragmentary side view of the lower part of a modified embodiment of the invention.

Referring to the drawings, several rigid horizontal playing tubes 1 to 6 are disposed on top of one another to form a stack of tubes, all disposed in the same vertical plane. The tubes may have any convenient diameter and length and any desired number of them may be used. For example, six tubes about a foot long and an inch and a half in diameter have been found to be very suitable. They may be made of inexpensive material, such as the same material as cardboard mailing tubes. The tubes may be held together in any suitable manner, such as by gluing.

As shown in FIG. 3, the bottom of each tube, except the bottom tube 6, is provided with at least two longitudinally spaced holes 7. Two holes make the game difficult enough, but three or more could be used if desired. The top of each tube, except the top tube 1, is provided with a like number of holes 8 registering with the holes in the bottom of the tube directly above it. The spacing of the registering holes lengthwise of the tubes varies from tube to tube.

Each tube below the top tube has an outlet opening 9 at one end. Some of these openings are at one end of the stack and the rest are at the opposite end. Each tube above the bottom tube also has a closed end formed by an end wall 10 of any suitable kind. The end portion of the top tube opposite closed end 10 is provided with an entry opening 11 which may be in its top or in its end wall 12. The end of the bottom tube opposite its outlet

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opening either is provided with an exit opening or, if the exit opening 13 is in the side of the tube, is closed by an end wall 14 as shown.

Starting between the upper holes 8 in each tube and inclined downwardly toward the bottom of the adjacent outlet opening 9 in that tube, there preferably is a ramp 15. The ramp therefore extends beneath one of the upper holes. The ramp may be a bent strip of cardboard that has vertical end portions. The upper end portion 16 is glued to the upper wall of the tube, while the lower end portion 17 fits in the lower part of the outlet opening and closes the space between the lower end of the ramp and the bottom of the tube.

The outlet openings 9 at the ends of the tubes open into receivers, preferably upright tubular elements 20 and 21 secured to the opposite ends of the stack of horizontal tubes. Each of these receivers can conveniently be made by severing a tube of the same type as used in the stack into two semi-cylindrical halves. The open side of each half tube is secured to an end of the stack, such as by gluing its edges thereto. The tubular receiver 20 at the left-hand end of the stack in FIGS. 1 and 3 extends from beneath the entry opening 11 in the top tube to the bottom of the stack. If desired, its upper end may be closed by a semi-circular top wall 22, while a similar bottom wall 23 closes its lower end. The inside of the receiver is provided with transverse partitions 24 and 25 directly below the upper two outlet openings 9. The side of the receiver has large openings 26 in it beside the two partitions and bottom wall 23. The upright receiver 21 at the opposite end of the stack extends from the top tube down to a point between the exit opening 13 and the nearest outlet opening 9 above it. This receiver likewise may have its opposite ends closed by a top wall 27 and a bottom wall 28, and it contains a transverse partition 29 below the upper outlet opening 9. The side of the receiver is provided with large openings 31 beside its partitions and bottom wall.

The game is played by inserting a marble or ball 33 through the entry opening 11 in the top tube 1. Of course, the ball must be small enough to pass through all of the holes and openings in the various tubes. The object of the game is to so manipulate it in the hands that the ball will roll back and forth in the tubes and drop from one tube to the next until it enters the bottom tube, from which it can be removed through exit opening 13. It is very difficult to make the ball travel through all six tubes from the entrance to the exit, without falling through holes 7 and 8 above a ramp in one of the tubes and thereby being diverted into one of the end receivers 20 or 21. When that occurs, the player has to remove the ball from the appropriate opening in the side of the receiver and start over again. During play he cannot see the ball except when it drops through a pair of registering holes, or unless one or more of the tubes is transparent. Whether he is successful or unsuccessful, the ball will remain in the bottom tube or one of the receivers until he removes it. The large openings 26 and 31 in the sides of the receivers can be numbered consecutively from top to bottom so that the player will get a higher score the farther down through the stack of tubes he is able to roll the ball.

This game can be played anywhere, because it is held in the hands of the player. For young children, for whom the game may be so difficult that they will soon lose interest in it, it can be made easier by omitting ramps 15. In their absence, it is easier to keep the ball from rolling out of the tubes into the end receivers.

In the modification shown in FIG. 8, the upright end receivers 35 and 36 are not provided with transverse partitions and bottom walls, but extend below the stack of

playing tubes and into the cut away end portions of a horizontal retaining tube 37 connected to the receivers for catching and holding a ball dropping into either end of it. The ends of the retaining tube are closed and its side is provided with at least one large opening 38 so that a ball in the tube can be picked out of it. If two openings are used, they are located near the opposite ends of the tube and the center of the tube may be blocked to confine a ball to either end.

According to the provisions of the patent statutes, I have explained the principle of my invention and have illustrated and described what I now consider to represent its best embodiment. However, I desire to have it understood that, within the scope of the appended claims the invention may be practiced otherwise than as specifically illustrated and described.

I claim:

1. A puzzle game comprising a stack of substantially horizontal rigid playing tubes mounted on top of one another in a common vertical plane, each adjoining pair of tubes having at least two longitudinally spaced pairs of registering vertical holes connecting them, each tube below the top tube having an outlet opening at one end, some of said openings being at one end of said stack and the rest being at the opposite end, the top tube being provided with an entry opening and the bottom tube being provided with an exit opening, receivers secured to the opposite ends of the stack and communicating with the adjacent outlet openings, and a ball of a size that can pass through all of said holes and openings, the receivers having openings permitting retrieving the ball therefrom.

2. A puzzle game comprising a stack of substantially horizontal rigid playing tubes mounted on top of one another in a common vertical plane, each adjoining pair of tubes having at least two longitudinally spaced pairs of registering vertical holes connecting them, each tube below the top tube having an outlet opening at one end, some of said openings being at one end of said stack and the rest being at the opposite end, a ramp disposed beneath the pair of holes in each tube nearest the outlet opening therein and inclined downwardly toward the bottom of that opening, the top tube being provided with an entry opening and the bottom tube being provided with an exit opening, receivers secured to the opposite ends of the stack and communicating with the adjacent outlet openings, and a ball of a size that can pass through all of said holes and openings, the receivers having openings permitting retrieving the ball therefrom.

3. A puzzle game comprising a stack of substantially horizontal rigid playing tubes mounted on top of one another in a common vertical plane, each adjoining pair of tubes having at least two longitudinally spaced pairs of registering vertical holes connecting them, each tube between the top and bottom tubes having a closed end and an outlet opening at the opposite end, some of said openings being at one end of said stack and the rest being at the opposite end, the bottom tube also having an outlet opening at one end, a ramp disposed beneath the pair of holes in each tube nearest the outlet opening therein and inclined downwardly toward the bottom of that opening, the lower end of each ramp being spaced from the bottom of its tube and provided with a down-turned portion closing the space between said lower end and tube bottom, the top tube being provided with an entry opening and the bottom tube being provided with an exit opening spaced from its outlet opening, an upright tubular receiver secured to each end of the stack and communicating with the adjacent outlet openings, and a ball of a size that can pass through all of said holes and openings, the receivers having openings permitting retrieving the ball therefrom.

4. A puzzle game comprising a stack of substantially horizontal rigid playing tubes mounted on top of one another in a common vertical plane, each adjoining pair of tubes having at least two longitudinally spaced pairs

of registering vertical holes connecting them, each tube below the top tube having an outlet opening at one end, some of said openings being at one end of said stack and the rest being at the opposite end, the top tube being provided with an entry opening and the bottom tube being provided with an exit opening, a ramp disposed beneath the pair of holes in each tube nearest the outlet opening therein and inclined downwardly toward the bottom of that opening, each tube above the bottom tube having a closed end opposite said opening, an upright tubular receiver secured to each end of the stack and communicating with the adjacent openings, and a ball of a size that can pass through all of said holes and openings, the receivers having openings permitting retrieving the ball therefrom.

5. A puzzle game comprising a stack of substantially horizontal rigid playing tubes mounted on top of one another in a common vertical plane, each adjoining pair of tubes having at least two longitudinally spaced pairs of registering vertical holes connecting them, each tube below the top tube having an outlet opening at one end, some of said openings being at one end of said stack and the rest being at the opposite end, a ramp disposed beneath the pair of holes in each tube nearest the outlet opening therein and inclined downwardly toward the bottom of that opening, the top tube being provided with an entry opening and the bottom tube being provided with an exit opening, an upright semi-cylindrical member secured to each end of the stack and having its open side overlying the adjacent outlet openings, and a ball of a size that can pass through all of said holes and openings, said members having openings permitting retrieving the ball therefrom.

6. A puzzle game comprising a stack of substantially horizontal rigid playing tubes mounted on top of one another in a common vertical plane, each adjoining pair of tubes having at least two longitudinally spaced pairs of registering vertical holes connecting them, each tube below the top tube having an outlet opening at one end, some of said openings being at one end of said stack and the rest being at the opposite end, the top tube being provided with an entry opening and the bottom tube being provided with an exit opening, an upright tubular receiver secured to each end of the stack and communicating with the adjacent outlet openings, transverse partitions in each receiver directly below the adjacent outlet openings, and a ball of a size that can pass through all of said holes and openings, each receiver having openings beside its transverse partitions permitting retrieving the ball from the partitions.

7. A puzzle game comprising a stack of substantially horizontal rigid playing tubes mounted on top of one another in a common vertical plane, each adjoining pair of tubes having at least two longitudinally spaced pairs of registering vertical holes connecting them, each tube below the top tube having an outlet opening at one end, some of said openings being at one end of said stack and the rest being at the opposite end, the top tube being provided with an entry opening and the bottom tube being provided with an exit opening, an upright tubular receiver secured to each end of the stack and communicating with the adjacent outlet openings, a closed end retaining tube connecting the lower ends of said receivers and communicating therewith, and a ball of a size that can pass through all of said holes and openings, the retaining tube being provided with an opening through which the ball can be retrieved if it falls into that tube.

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