Jan. 28, 1969 E. DADDIS 3,424,456

BALL GAME WITH BLOCKING MEANS AND MAGNETIC DEFLECTOR

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FIG. 1

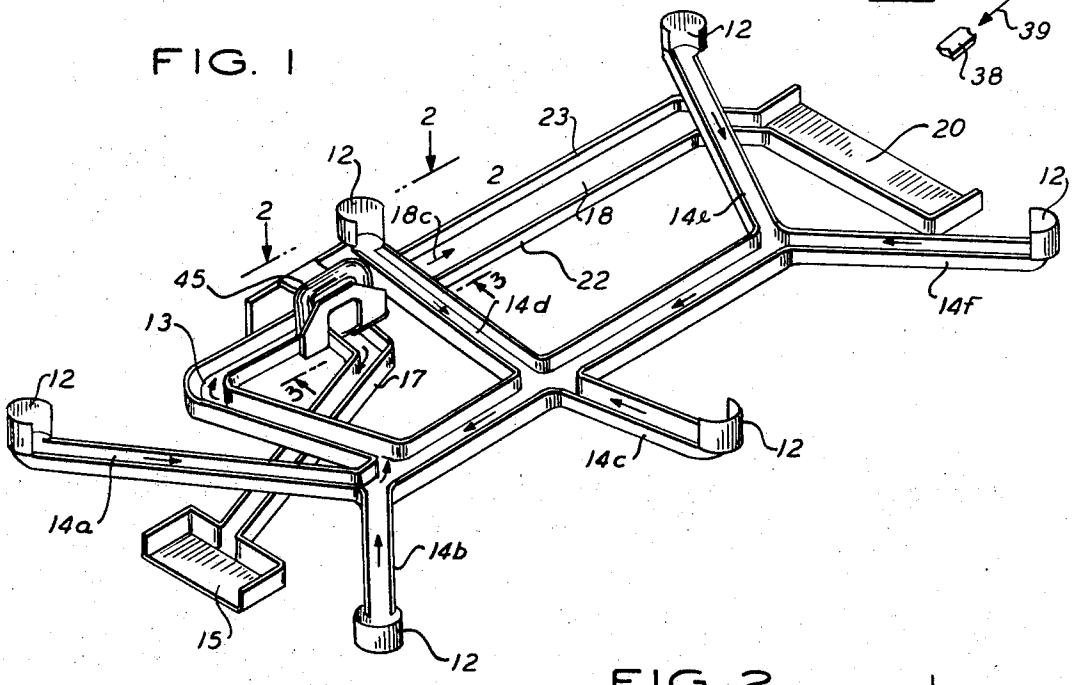
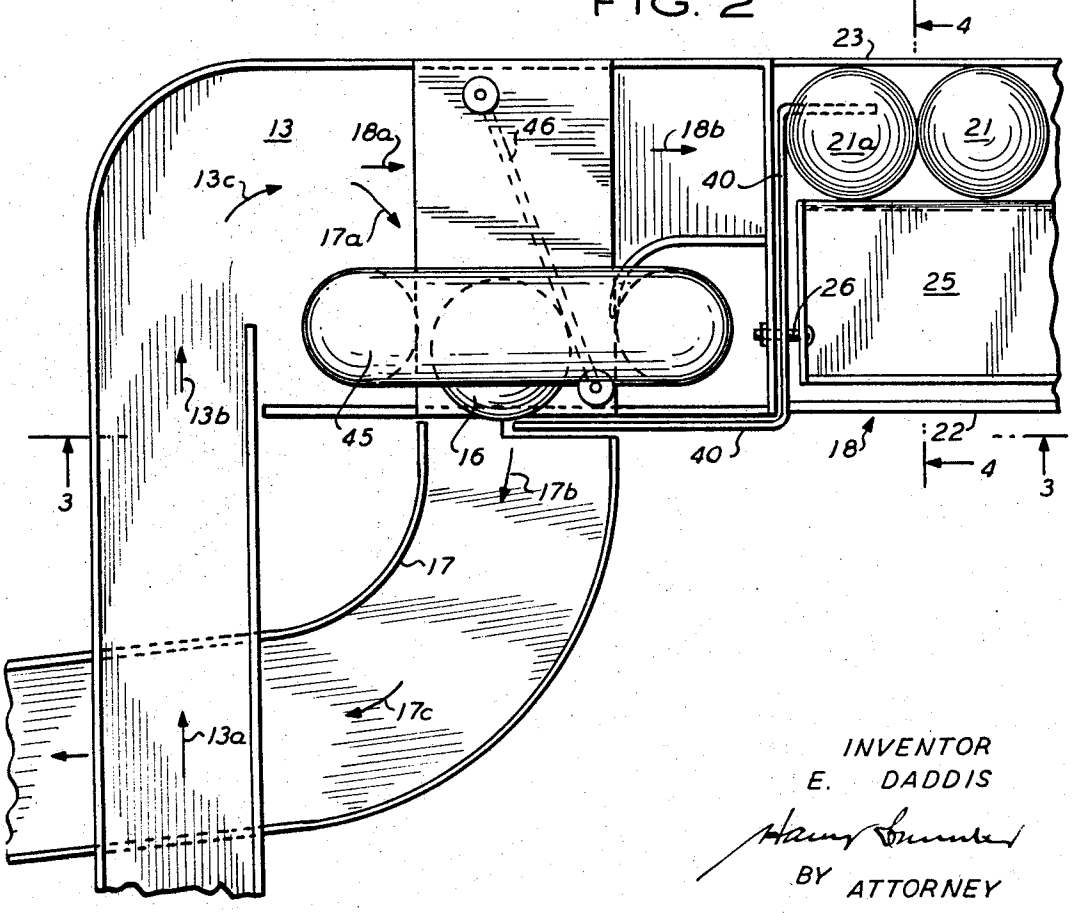


FIG. 2



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FIG. 3

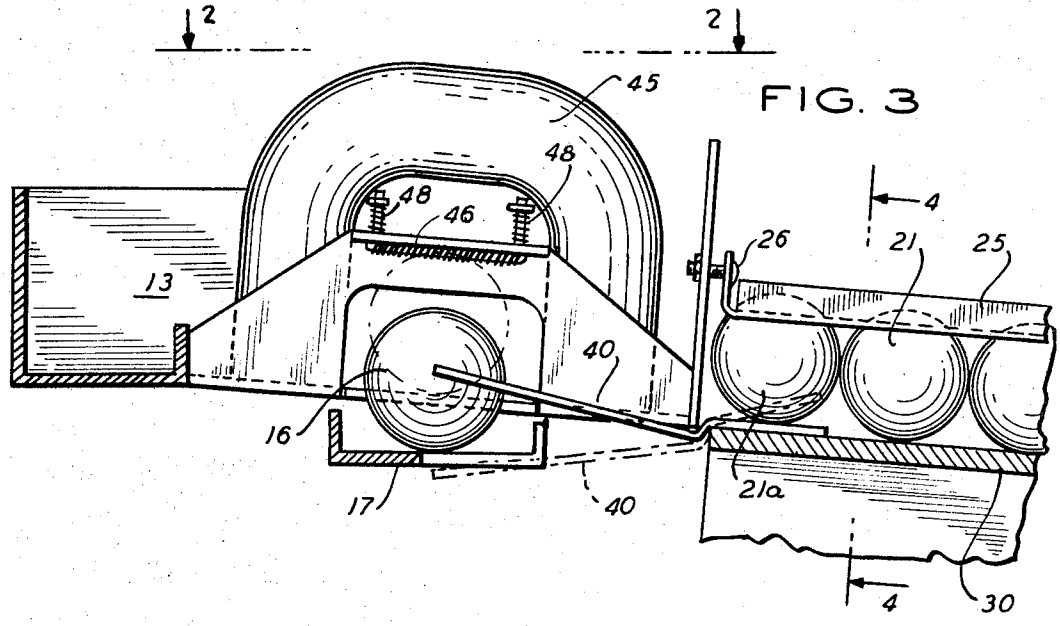


FIG. 4

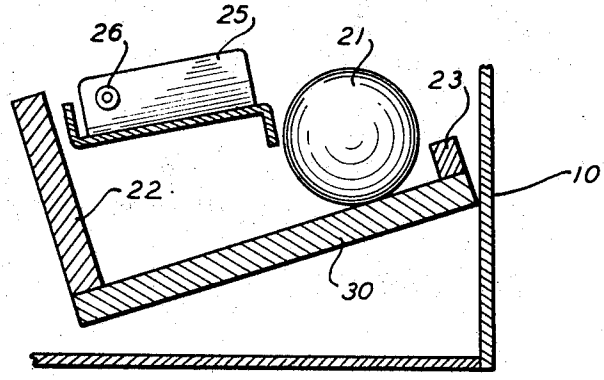
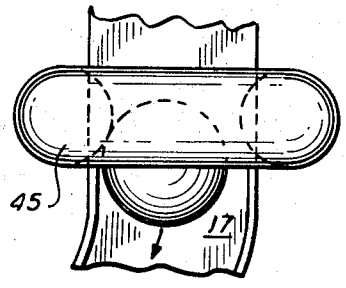


FIG. 5



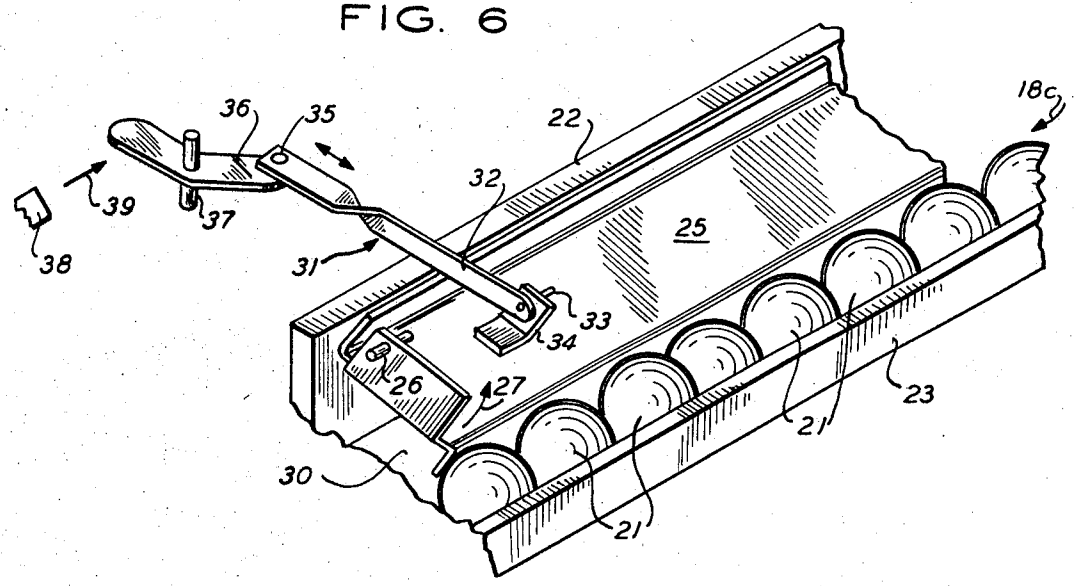
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FIG. 6



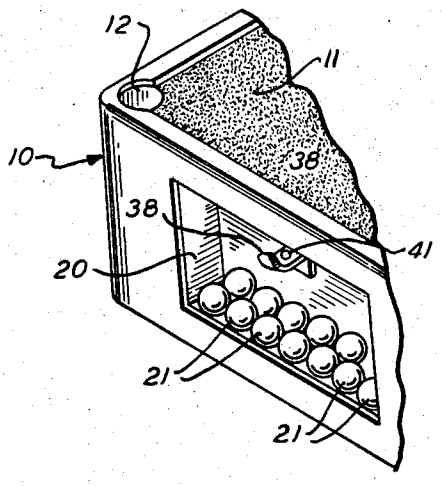


FIG. 7

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BALL GAME WITH BLOCKING MEANS AND MAGNETIC DEFLECTOR

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U.S. Cl. 273—11 5 Claims

Int. Cl. A63d *15/00;* A63f *7/00*

ABSTRACT OF THE DISCLOSURE

A billiard table has means for directing balls falling into pockets of the table to receptacles, the cue ball moving along one path to one receptacle and the others along another path to another receptacle. The means for determining the path of the cue ball from the others is preferably a magnetic means located at a dividing point of the two paths, one of the paths being at a right angle to the other, the cue ball having magnetic properties and rolling about the magnetic means to be directed to the second path. Additional means may be provided for arresting the motion of the cue ball to its receptacle until all of the other balls played have been released for movement to their receptacle.

This invention relates to a ball game device played on a table—for example (without limitation thereto) a game of billiards played with a cue ball and billiard balls.

Pursuant to the invention, means are provided for automatically selectively directing one of the balls, such as the cue ball, through passageways in the table and for then selectively directing such ball to a predetermined first receptacle, which may be located at one end of the table, and for automatically selectively directing the other ball or balls to another receptacle, located elsewhere—for example, at the other end of the table. Such means for so selectively directing balls are, pursuant to the invention, preferably located within the table, under the top thereof, concealed from view, operative by selective magnetic or sizing means.

Pursuant to the invention, means are provided within the table, below the table top, for channelling all of the balls from the pockets or other ball receiving areas of the table top, to a given position interiorly of the table. This given position may, for example, comprise a trough with which the first receptacle in the table is connected by a passageway (to receive for example, the selected ball) and with which the other receptacle in the table is connected by a separate passageway to receive the other balls. The selector, directing means in the table are preferably disposed intermediate the trough and said passageways.

Further features of the invention comprise novel means for holding a group of balls against movement until actuation of a coin mechanism or other releasing means, and for separately holding one ball until release of another or group of balls.

The invention thus lends itself readily to effective use in coin operated tables, is selective and automatic in operation and effective and durable in use.

The drawings, illustrating procedures and devices useful in carrying out the invention, and the description below, are exemplary only of the invention, which shall be deemed to cover all other devices and procedures coming within the scope and purview of the appended claims.

In the drawings, wherein similar reference characters indicate like parts:

FIG. 1 is a partly fragmentary, schematic view of a ball game device embodying the invention,

FIG. 2 is an enlarged fragmentary plan view thereof, taken at line **2**—**2** of FIGS. 1 and 3,

FIG. 3 is an enlarged transverse sectional view, taken at line **3**—**3** of FIG. 1,

FIG. 4 is an enlarged vertical sectional view taken at line **4**—**4** of FIGS. 2 and 3,

FIG. 5 is a schematic top plan view of parts of the device shown in FIG. 2,

FIG. 6 is a fragmentary perspective view of a means pursuant to the invention (coin or otherwise actuated) for holding a ball or balls against movement pending release, and

FIG. 7 is a fragmentary end perspective view of a portion of a table which may be used in carrying out the invention.

The game device of this invention may be used in connection with a table **10** (FIG. 7) of any desired or convenient outline, having a top **11** with pockets **12** (FIGS. 7 and 1) and having means **13**, which may be in the form of a trough, connected to the pockets by arms **14***a*–**14***f*, for receiving balls moving through the pockets **12** in playing the game, channelling them to the trough **13**. The latter constitutes a given position within the table for selectively directing the cue ball (for example **16**, FIG. 2) from the given position (trough) **13** to the first receptacle **15** for the ball **16**, through the connecting passageway **17** or the like. Means such as a passageway **18** may (FIG. 2) connect the given position **13** with a second receptacle **20**, for the other ball or balls **21** (FIGS. 1 and 7).

Pursuant to the invention, the arms **14***a*–**14***f*, trough **13** and passageways **17**, **18** are disposed interiorly of the table **10** beneath the top **11** and concealed therein, being suitably supported and mounted in the table for the purpose, and connecting the pockets **12** with the receptacles **15**, **20**. Thus, pursuant to the invention, balls played into the pockets will pass thence to the receptacles **15**, **20** after initial passage through the intermediate selector trough **13**, where a particular ball, such as cue ball **16**, will be directed separately from another or the others. Pursuant to a further feature of the invention, below described, the particular ball **16** may be held against movement until release of the other ball or balls, as by an operator—actuated release mechanism. Thus none of the balls would be released until the simultaneous or progressive release of some or all.

Billiard balls are used to exemplify use of the invention in the playing of a ball game but the invention is equally adapted to playing of any other game wherein one ball is to be selectively directed to a first position or receptacle in the table from a given position therein, and the other ball or balls are to be selectively directed to a second position or receptacle in the table. Arrows **13***a*–**13***c* (FIG. 2) show movement of the balls **16** and **21** toward the trough **13**; arrows **17***a*–**17***c* show the direction of movement of cue ball **16** from trough **13** and into the passageway **17**, arrows **18***a* and **18***b* and **18***c* show the direction of movement of the balls **21** from the trough **13** into passageway **18**, The passageway **18** is preferably formed with parallel spaced walls **22**, **23** which, as will be noted from FIGS. 1 and 6, are preferably spaced apart substantially more than the diameter requirements of the balls **21**. The passageway **18** is normally (FIG. 6)

partially narrowed by a tiltable check plate **25** which may be rotatably mounted on a bearing **26**, enabling rotation of the plate **25** as noted by arrow **27**, to elevate plate **25** clear of the balls **21** and allow said balls to move toward wall **22** (in the position shown in FIG. 6). Bottom wall **30** of passageway **18** may be correspondingly canted relative to the wall **22** and tilted toward second receptacle **20**. The balls, on release, move along said bottom wall **30** and into the receptacle **20**.

To achieve such tilting action, a linkage **31** may be provided (FIG. 6) comprising rod **32** pivotally connected as at **33** to a bent plate **34** fixed to plate **25** and pivotally connected as at **35** to a bell crank **36** itself pivoted as at **37** to a fixed support and thus rotatable on reciprocation of actuator **38**. The latter may be a bar movable by the user of the machine in the direction of arrow **39** (FIGS. 1 and 6) to engage an arm of the bell crank **36** and rotate the latter, in turn rotating plate **25** in the direction of arrow **27** to release the balls **21** for movement to the second receptacle **20**.

In enhancement of the versatile game features of the invention, means may be provided to hold a ball or balls until movement of another ball or balls. Such means may be mechanical or other means adapted to that end. The drawings exemplify a means, without limitation thereto, comprising a holder or check member actuated responsive to the position or location of a ball or balls. To that end such check member may be a pivoted level or plate or other intercepting means, and may be actuated manually or automatically, as previously described.

During the time that the balls are (FIG. 6) held entrapped by plate **25**, the last (**21***a*) of the series of balls **21** (FIG. 3) rests on a Z-shaped bar **40**, which may (FIG. 3) be designed for selective movement of one end thereof into and out of intercepting or blocking relation to the ball **16**, depending on the position of another ball or balls. To that end bar **40** may have the offset portion thereof positioned in bearing engagement with the end edge of the wall **30** so that when one end of bar **40** is held down by the weight of ball **21***a* the opposite end of the bar will be rotated to the full line position shown in FIG. 3, intercepting the selected ball **16**, until ball **21***a* moves clear of bar **40** (due to rotation of plate **25** for example), whereupon the opposite end of bar **40** will move to the dotted line position, clear of the ball **16** and the latter will roll to its receptacle **15**.

Thus all of the balls will be held against movement to their respective receptacles until actuation of the ball release means. The latter may, as above noted, be the plate **25** and associated mechanism above described, or other means operative to the same end and actuated by the operator, as, for example, through a suitable coin device (**41**, FIG. 7) in the machine which may include on actuator bar **38** actuated upon inserting the appropriate coin at **41**. To this end any number of suitable commercial coin mechanisms operating in the fashion above described, may be used. If desired, the table may be non-coin operated, in which case the actuator bar would be subject to the control of the operator for releasing the balls.

The ball **16** may, as above noted, be the cue ball, or any other ball, which, according to the rules of the game to be played, should be separated from the other balls. It may be automatically and selectively separated and delivered to the first receptacle **15** magnetically as shown in FIGS. 2, 3, 5, by magnetic means **45** at the given position **13** of the device (to which all of the balls from the table top **11** move through the pockets **12** and arms **14***a–f* as above described).

In accordance with the invention, said magnetic means **45** (FIG. 2) may be disposed in straddling relation at the entrance to the passageway **17**, marginally intermediate the given position **13** and the passageway entrance to the passageway **17** and may comprise a U-shaped magnet whose opening thus defines the opening intermediate the given position **13** and said passageway **17**. In that form of the invention the cue ball **16** will be provided with magnetic properties. It has been found, in practice, that when this arrangement is used, the cue ball **16** will, moving from the trough **13** into the passageway **17**, actually hug the arm of the magnet (FIG. 5), providing a safety factor in movement of the cue ball to passageway **17**.

If desired, as shown in FIG. 2, an alternate, or additional sizing selector means may be provided, wherein a ball **16** is selectively deflected into passageway **17** by an interceptor bar **46** (FIG. 2) diagonally disposed between passageways **17** and **22** and defining passage restrictive means, in an arrangement such (dotted lines, FIG. 3) that a ball of larger diameter than the distance between the floor of trough **13** at that point and the interceptor bar **46** will be deflected by said bar and drop down into passageway **17**, whereas balls of smaller diameter will pass under bar **46** and continue to move toward the passageway **18** by virtue of inertia of movement from the positions of arrows **18***a*, **18***b* (FIG. 1) at opposite sides of the bar **46**. The balls thus will continue into (FIG. 2) passageway **18**, intermediate wall **23** thereof and plate **25**. The bar **46** may be a spring mounted U–shaped bar as shown in FIG. 3, spring **48** taking up the shock of contact of a ball with the bar and slowing up movement of such ball for the turn in direction of movement thereof.

While the foregoing is a disclosure of exemplary embodiments, it is to be understood that the invention is not limited thereto or thereby, the inventive scope being defined in the appended claims.

I claim:

1. In a ball game device including a table having a top for movement of balls therealong and having means for receiving balls so moved along the top and for channeling them to a given position within said table, a first receptacle in said table for a predetermined one of the balls, another receptacle in said table for another of the balls, means intermediate the said given position in the table and said receptacles for selectively directing said predetermined ball to said first receptacle and for directing the other ball to said other receptacle, means for holding said other ball intermediate the given position and the receptacle therefor including angularly directed means for gravity movement of the ball and a tiltable plate holding said ball against gravity movement and means operative responsive to the position of said other ball at said intermediate position for blocking movement of said predetermined ball.

2. In a device as set forth in claim **1**, coin activated means for moving said tiltable plate to release said other ball.

3. In a ball game device including a table having ball receiving pockets and runways therefrom leading to a walled passageway to receive balls at least one of which has magnetic properties, means for diverting said ball with magnetic properties from said walled passageway comprising an opening provided in a wall of the passageway, a second passageway communicating with said opening and a permanent magnet straddling said opening, and with at least a leg portion thereof close to a vertical edge of the opening to cooperate with the ball having magnetic properties so as to deflect the same from the walled passageway and through the wall opening into the second passageway.

4. In a table ball game device having balls at least one of which is dissimilar from the others and having at least one pocket and a first passageway leading to a receptacle communicating with said pocket, a second passageway communicating with said first passageway at a juncture of said passageways, means for assorting the balls so that some will enter said first passageway and at least one dissimilar ball will enter said second passageway, means in said first passageway located beyond the

juncture for arresting a number of balls from movement along said first passageway, a second aresting means in said second passageway for arresting movement of a ball in said second passageway, said second arresting means having a portion extending into the first passageway and beneath the position of a ball therein in arresting position of the ball therein to be depressed by said ball to thereby render the second arresting means effective, and means to release the first arresting means to release the balls in said first passageway and by reason of ball displacement to release the second arresting means whereby the ball arrested thereby may move along the second passageway.

5. The device as set forth in claim 4 wherein the second arresting means is a Z-shaped bar with one end overlying the floor of the first passageway and the other end extending toward the second passageway.

References Cited

UNITED STATES PATENTS

1,938,265	12/1933	Thomas	273—11
3,096,981	7/1963	Fisher	273—11
3,115,341	12/1963	Feddick et al.	273—11
3,304,085	2/1967	Heiss et al.	273—11

FOREIGN PATENTS

730,584	3/1966	Canada.

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U.S. Cl. X.R.

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