

"IMPROVEMENTS IN OR RELATING TO TABLES"

This invention relates to a table and has been devised particularly for playing games such as snooker and particularly though not solely for coin operated tables.

It is an object of the present invention to provide a
5 table which will at least provide the public with a useful choice.

Accordingly the invention consists in a table for playing snooker or the like games, comprising a playing surface, pockets from said playing surface, colour sensing
10 means to sense the colour of balls passed through said pockets, and control means to direct said balls so as to be either retained in said table or returned from said table, said control means and said colour sensing means being associated so that retention or returning of a said ball is
15 determined by the colour of that said ball sensed by said colour sensing means.

To those skilled in the art to which the invention relates, many changes in construction and widely differing embodiments and applications of the invention will suggest
20 themselves without departing from the scope of the invention as defined in the appended claims. The disclosures and the descriptions herein are purely illustrative and are not intended to be in any sense limiting.

25 One preferred form of the invention will now be described with reference to the accompanying drawings in which,

Figure 1 is a diagrammatic plan view of part of a table according to one preferred form of the invention,

Figure 2 is a diagrammatic cross sectional side elevation of one preferred form of table according to the invention,

Figure 3 is a diagrammatic side elevation of one form of ball return means useable in a preferred form of the invention, and

Figure 4 is a diagrammatic block circuit diagram useable in conjunction with a table according to one preferred form of the invention.

One preferred form of the invention will now be described and is provided as follows.

The table 1 of the preferred form of the invention provides a planar surface 2 which is used for playing games such as snooker or the like and which is surrounded by cushions 3 in the known manner. At selected positions, pockets 4 are provided there being for example a pocket at each corner of a rectangular table and also at the mid point of the longer sides if for example snooker is to be played on the playing surface 2.

Below the pockets is provided a pathway which receives the balls and the pathway may comprise a shaped plate 5 directing the balls to an opening 6 therein. In the preferred form of the invention therefore any ball sunk through a pocket 4 will arrive at opening six no matter which pocket 4 the ball was actually sunk through. The aperture 6 leads to a pathway 7 which has therealong colour sensing means 8 which may tke the form of the apparatus for

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colour recognition described in European patent application
no. 83307879.3 (publication no. 0114515A2). The voice
output described in that specification may of course be
suppressed. Positioned close to the colour sensing device
5 8 may be provided a lamp 9 and also along the pathway in
which the colour sensing device 8 is provided may be
provided a pair of position sensors. The first position
sensors 10 senses the passage of a ball therepast and
switchs on the lamp 9 thereby allowing sufficient time for
10 the lamp to warm up and reach the required light output.
The second set of position sensors 11 sense the position of
a ball correctly positioned for the colour reading
operation to be performed. The sensors 10 and 11 may take
any suitable form and may for example be provided in the
15 form of switches operated by feelers which extend across
the path of travel of a ball or which may take the form for
example of a light source and photo electric cell so that
the light received by the photo electric cell is
interrupted by the passage of a ball.

20 Once passed the colour sensing means 8 the pathway 12
divides into a return pathway 13 and a retain pathway 14.

The pathway 14 may comprise a channel or groove or can
be fabricated from wires or pipes as desired. The return
pathway 13 may be formed substantially by a gap or break in
25 the retain pathway 14 through which balls may be pushed.
This may be achieved for example by providing a movable
gate positionable across pathway 14 to direct balls through
the opening to pathway 13 or by a gate rotatable from
positions closing one or other of the pathways or

alternatively and preferably the ball may be knocked from its path, for example by a solenoid 15 provided with a core which moves to knock a ball passing the solenoid 15 in a direction so to do is given to the solenoid 15. The
5 pathway 13 leads to a return opening 16 from where balls may be gathered exteriorally of the table. To this end a tray 17 may be provided into which balls passing through the pathway 13 fall to be returned to the collection point 16.

10 The pathway 14 has a gate or other retention device 18 therein or positioned at the end thereof and thus balls passing along the pathway 14 will be prevented from reaching the collection point 16 by the gate or other retention device 18. When the gate 18 is opened balls
15 retained on the pathway 14 will pass through the gate 18 and be returned along the tray 17 to collection point 16 for example in the direction indicated by arrows 20.

The pathway 14 preferably provides one or more manually operable ball return means 21 and where the game to be
20 played is snooker, six such manually operable return means are desirably provided, that is to say one for each ball colour other than red. The last of the ball return means 21 is preferably positioned so that the part 22 of the pathway 14 between the gate 18 and the last ball return
25 means 21 is substantially identical in length to the number of red balls which are provided for use on the table, for example 10 balls.

Each ball return means 21 allows a ball to be returned directly into the tray 17 for return to the position 16



desirably operated by manual operation of a switch. Thus each ball return means 21 may take the form of a plate 22 having a downwardly extending rib 23 which forms a fulcrum point. Extending outwardly the plate is turned upwardly as at 24 so as to channel a ball 25 across the plates without tipping the ball from the pathway 14. At the other edge of the plate 22 is provided a downwardly extending foot 26 and the arrangement is such that with a ball 25 positioned substantially as shown in Figure 3 the plate 22 would over balance and tip about the fulcrum 23 to a second position wherein the ball 25 would move from the plate in the direction of arrow 27 to be returned ultimately to collection point 16. A catch is provided to ordinarily prevent such rotation and the catch may comprise an angle member 28 positioned alongside the pathway 14 and having an aperture at 29 through which extends a pin 30. The pin 30 is mounted on a flexible and resilient member 31 such as a leaf spring which may be engaged at its other end 32 to the upstanding arm 33 of the angle member 28. A solenoid 34 may then be provided the core 35 of which is attached to the pin 30 so that when the solenoid 35 draws the core 35 thereinto the pin 30 is withdrawn allowing the plate 22 to overbalance. The pin 30 is prevented from returning to its rest position by engagement against the foot 26 but once the ball 25 is removed from the plate 22 the plate returns to the position shown in 23 assisted for example by a small spring 36 between the pathway 14 and the plate 22.

The circuitry is desirably such that the plates 22 may be manually operable for a short period after a ball is

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played so as to allow a ball which falls through the pockets in the correct colour sequence but as the result of a foul shot to be returned to the table. Thus for example after a desired delay for example six seconds the solenoid 34 may be operable for a short period of time say twenty seconds to allow a ball to be returned to play if necessary.

Referring to Figure 4 a control logic and programme unit 40 is provided which includes a programmable memory and which is powered from a power source or battery 41. Various functions operate as follows. A coin box is provided which when a coin is entered operates the game start coin sensor 42 which causes the gate 18 to open by means of the initial ball release device such as a solenoid or gate 43. Balls retained in the pathway 14 are then returned through the tray 17 to the collection point 16 and correctly placed on the table. If snooker is to be played and initially a red ball is sunk, the programming in circuit 40 is such that when that red ball is sensed by the colour sensing means 8 the shunt 15 does not operate and the ball continues along pathway 14 coming to rest against gate 18. If the next ball sunk is a coloured ball the colour sensing device 8 will sense that a coloured ball has passed and cause the shunt 15 to operate passing the ball through pathway 13 back to collection point 16 for repositioning on the table. During the initial stages of the game the red ball will become positioned in the part 22 of pathway 14 and each coloured ball will be returned. During the final stages of each game, that is to say after

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all red balls have been successfully potted, should the yellow ball be potted, the shunt 15 will then not operate and that yellow ball will pass along the pathway 14

becoming positioned on the farthest most ball return means

5 21. If the ball is not the yellow ball, the shunt 15 will operate to return the ball through pathway 13. If a ball is sunk in the correct colour sequence but as the result of a foul shot the ball release mechanism 44 is operated which may take the form for example of a selection of buttons for
10 example associated with a light to 45 to indicate that the buttons are operable. On operation of a button 44 during the time that it is operable the appropriate solenoid 34 will operate to allow return the ball 25 to the collection point 16. Once all of the balls have been sunk in the
15 correct sequence no further balls will be returned until the coin mechanism 42 is again operated.

Thus it can be seen that at least in the preferred form of the invention a table is provided which enables the colour of a ball sunk in a game of for example snooker or a
20 similar game to be sensed and either returned to continue play or held depending upon whether that ball has been correctly or incorrectly potted. This is desirable in particular as it increases the range of games which can be played on coin operated tables in a satisfactory manner.



C L A I M S

1. A table for playing snooker or the like games, comprising a playing surface, pockets from said playing surface, colour sensing means to sense the colour of balls passed through said pockets, and control means to direct
5 said balls so as to be either retained in said table or returned from said table, said control means and said colour sensing means being associated so that retention or returning of a said ball is determined by the colour of that said ball sensed by said colour sensing means.
- 10 2. A table as claimed in Claim 1 wherein said control means includes electronic circuitry including a programmable memory.
3. A table as claimed in either Claim 1 or Claim 2 wherein two ball pathways are provided from said colour sensing
15 means one pathway returning a said ball from said table and the other pathway having a retaining device so that balls passing along that said pathway are retained by said retaining device until said retaining device is released.
4. A table as claimed in Claim 3 wherein a plurality of
20 ball return means are provided in said retaining pathway, manually operable means being provided to operate said ball return means to return a selected and available ball from said table.
5. A table as claimed in Claim 4 wherein said each said
25 ball return means comprises a plate able to rotate between two positions about an axis substantially parallel to said retaining pathway, a first position of said plate causing a



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ball to be held on said plate and a second position of said plate causing said ball to be removed from said retaining pathway, and a catch being provided to retain said plate in said first position until said catch is released.

- 5 6. A table as claimed in any one of the preceding claims wherein an initial pathway is provided past said colour sensing means, each said pocket feeding said pathway.
7. A table as claimed in Claim 6 wherein ball position sensing means are provided to sense that a ball is
- 10 correctly positioned for said colour sensing means to sense the colour of a said ball.
8. A table substantially as herein described with reference to the accompanying drawings.
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