

Nov. 14, 1950

F. H. BERTELSMEYER

2,529,535

SHUFFLEBOARD SCOREBOARD

Filed Oct. 4, 1946

3 Sheets-Sheet 2

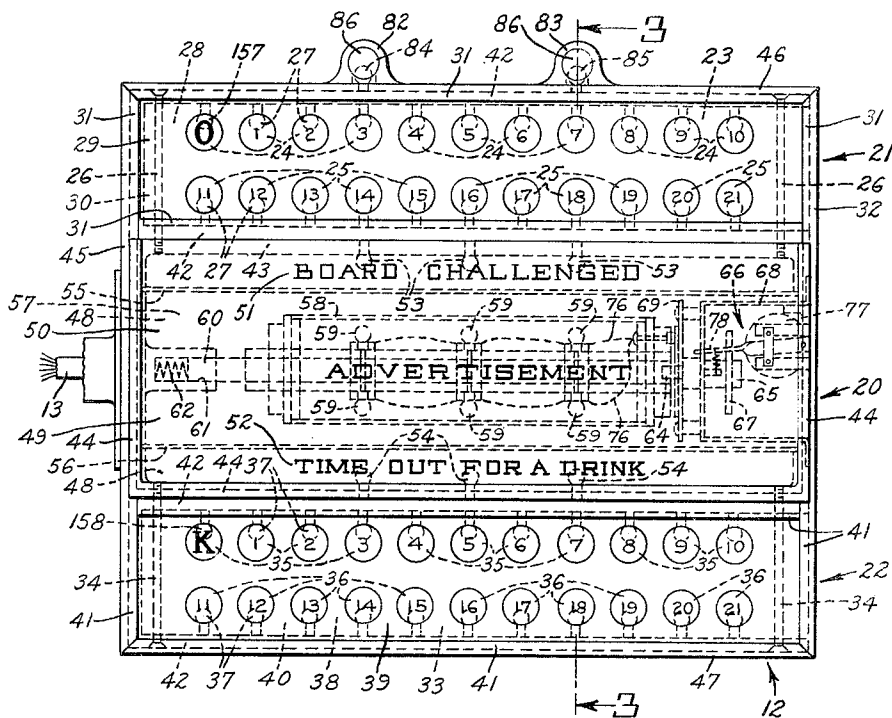


Fig. 2

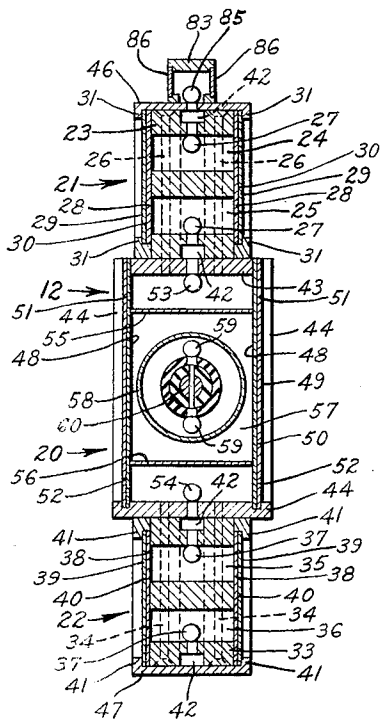


Fig. 3

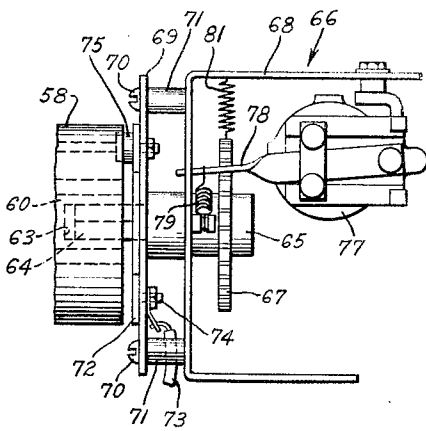


Fig. 4

INVENTOR

FRIEDRICH H. BERTELSMEYER

By

BY John A. Haurahan
ATTORNEY

ATTORNEY

Nov. 14, 1950

F. H. BERTELSMEYER

2,529,535

SHUFFLEBOARD SCOREBOARD

Filed Oct. 4, 1946

3 Sheets-Sheet 3

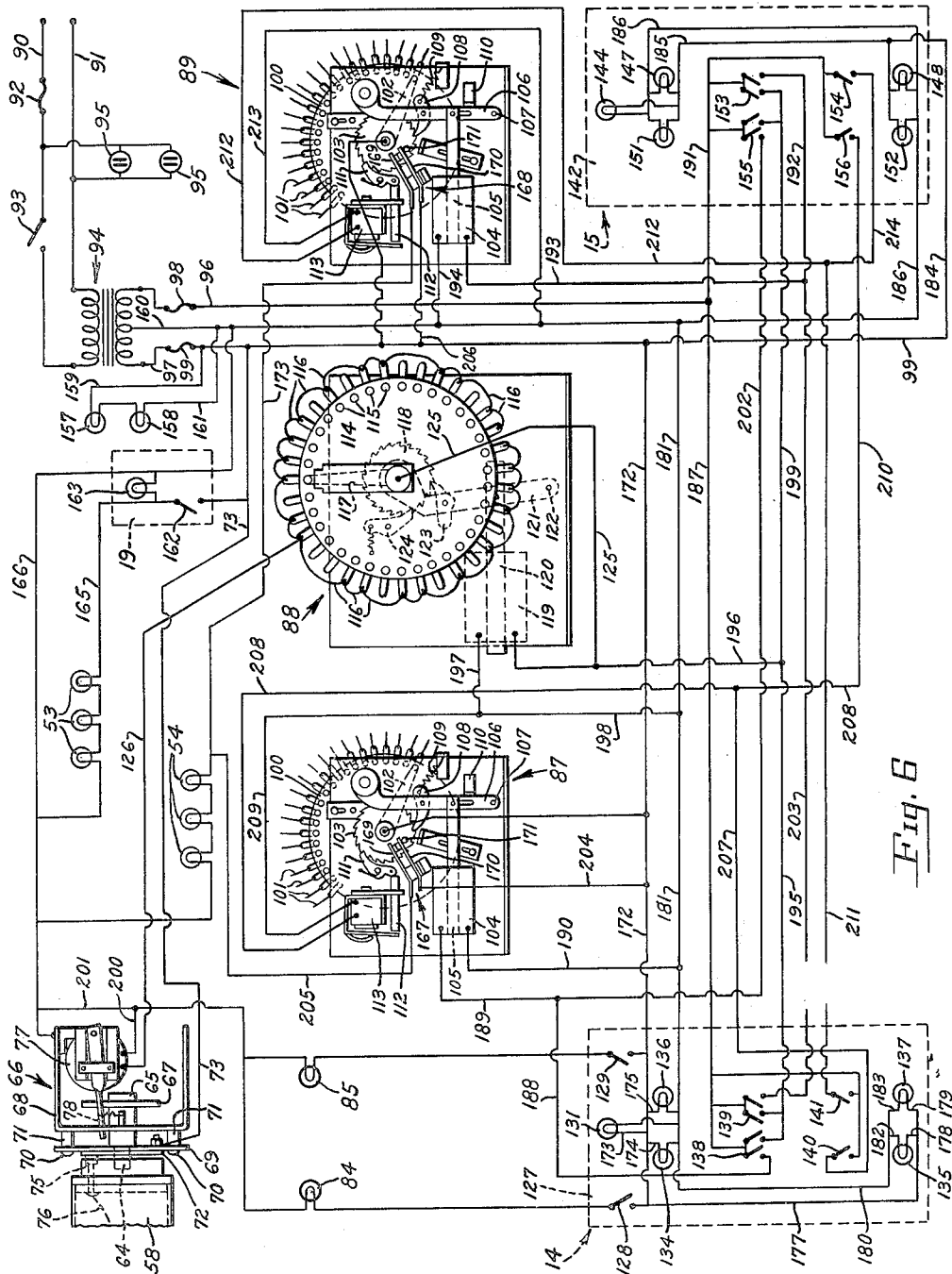


Fig. 6

INVENTOR

FRIEDRICH H. BERTELSMEYER

BY

John H. Haurahan
ATTORNEY

UNITED STATES PATENT OFFICE

2,529,535

SHUFFLEBOARD SCOREBOARD

Friedrich H. Bertelsmeyer, Stamford, Conn.

Application October 4, 1946, Serial No. 701,294

6 Claims. (Cl. 177—384)

1

This invention relates to new and useful improvements in game apparatus and has particular relation to a score board apparatus especially adapted for use in connection with the game of shuffle board.

The objects and advantages of the invention will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawings wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

In the drawings:

Fig. 1 is an isometric view showing the apparatus of the invention in association with a shuffle board;

Fig. 2 is an enlarged elevational view of one side of the score registering board;

Fig. 3 is a vertical sectional view taken as along the line 3—3 of Fig. 2;

Fig. 4 is an enlarged side elevational view of an operating mechanism employed;

Fig. 5 is an isometric view of the operating mechanism of Fig. 4; and

Fig. 6 shows the wiring diagram.

The present scoring apparatus is particularly adapted for use in connection with the game of shuffle board. Such boards are quite widely used in clubs, and the like, and up to the present time, no special apparatus has been provided for keeping track of the score of such a game. Sometimes a blackboard is located in the vicinity of the game apparatus. The present invention provides an electrically operated device with manual controls for keeping track of the score in a game of shuffle board, and the device includes other features adding to the usefulness of the device and to its appeal in connection with the game.

Referring in detail to the drawing, Fig. 1 shows the apparatus in one general or suggested relation to a shuffle board, the latter being generally designated 10. Beneath the shuffle board, or in any other convenient location, is a box 11 which may contain the main switch, transformer, convenience outlets, stepping relays, etc. Various controls within the box 11 are electrically connected with a score board generally designated 12 and preferably located over the shuffle board 10 about midway of the length of the same so as to be clearly visible from each end of the shuffle board.

The wires forming the electrical connections

2

are conveniently carried through a conduit 13. Manual controls for the scoring apparatus are located adjacent each end of the board 10 and such controls are generally designated 14 and 15, respectively, and the wiring therefrom is through conduits 16 and 17 connected into the U-shaped conduit 13. An additional conduit 18 contains wires connecting a switch 19 with the score board 12.

Score board 12 may be considered as divided into three sections; namely, an intermediate section 20; an upper section 21; and a lower section 22. The upper section 21 includes an inner body 23 formed of a block of wood or the like and having upper and lower rows of recesses or compartments 24 and 25, respectively. Bolts 26 or other means serve to secure the section 21 to the intermediate section 20. Within each of the compartments 24 and 25, with the exception of the first compartment 24, is a light bulb 27. In the first compartment 24, the light bulb is designated 157. These light bulbs are located intermediate the ends of the compartments.

Across the front and rear faces of the body 23 and thus across the ends of the compartments 24 and 25 are flat plate-like structures each comprising an inner pane of glass 28, an outer pane of glass 29, and an intermediate sheet 30 of paper or the like. These laminated structures are simply slid into place in back of flanges 31 provided at the upper and lower portions of the body at each side thereof and the front ends of the channels are closed as by a strip 32.

The intermediate sheet 30 of paper or the like is in the nature of a stencil and has symbols or numbers cut therein which are made easily visible on the energizing of the light bulb of any compartment across the end of which such symbols or numbers are disposed. Thus, as best shown in Fig. 2, the compartment 24 toward the left has the letter "O" stenciled in those portions of the sheets 30 which are over its respective ends. Then the other compartments 24 over their ends display the numbers 1-10 which may be cut into the sheets 30 while over the ends of the compartments 25 the sheets show the numbers 11-21. It will be understood that the same arrangement is provided at each side of the body 23 and the numbers are the same at each end of any given compartment. Thus, when the bulb 157 is energized, the letter "O" will be clearly visible at each side of the body 23 and then on any bulb 27 being energized the same number will be clearly visible at each side of the body 23 or the upper section 21 of the score board.

Section 22 is a duplicate of section 21 and it includes a block-like body 33 fastened to the section 20 as by bolts or the like 34. Within this body are upper and lower rows of recesses or compartments 35 and 36 (corresponding with the compartments 24 and 25 of section 21) in the first compartment 35 of which is located a light bulb 158 and in each of the others of which is located a light bulb 37. Over each of the front and rear sides of the body 33 is a laminated structure including an inner glass plate 38, an outer glass plate 39, and an intermediate layer 40, such as a piece of paper.

This paper in its portion which is located over the first compartment 35 carries a large "K" and then the other compartments 35 have over their respective ends the numbers 1-10 while the compartments of the lower row have over their respective ends the numbers 11-21. The laminated structure comprising the plates or layers 38, 39 and 40 slide into place in channels provided at the inner sides of ribs 41. The forward ends of such channels are closed by the lower portion of the strip 32 or by a separate section of a strip corresponding with the strip 32, as may be desired.

The letter "O" above mentioned is usually on one set of pieces or weights used in playing the game and the letter "K" on the other set. Additionally, one set is usually colored green and the other red. It is therefore suggested that the intermediate layer or plates 30 at each side of the upper section of the board be colored to correspond with the usual coloring of the playing pieces carrying the "O" and that the intermediate layer 40 of the lower laminations be colored to correspond with the color of the playing pieces carrying the letter "K." This, to some extent, helps in keeping track of the score since the score is registered according to whether it is made by the player or players using the "O" pieces or the player or players using the "K" pieces.

In each of the upper and lower bodies 23 and 33, the mentioned compartments are in the nature of holes extending entirely through the body from side to side thereof and it will be obvious that the light in any one compartment is effectively blocked off by the walls of the compartment and cannot in any way illuminate the number which is exposed against any other compartment. Grooves 42 in the upper and lower sides of the bodies 23 and 33 provide passage for conductor wires to the various sockets mounting the various bulbs 157, 158, 27 and 37.

Intermediate score board section 20 comprises an upper panel or section 43 and a lower panel or section 44. These panels or sections are connected to the bodies 23 and 33, respectively, by the bolts 26 and 34, respectively, and the panels themselves are connected by the end piece 32 and an end piece 45. These end pieces, together with an upper piece 46 and a lower piece 47, form a frame about the entire score board. The panels 44 carry channels receiving the lower edges of a pair of laminated structures each including an inner plate 48 which may be of glass and an outer panel 49 which is of glass or other transparent material, and an intermediate layer 50 of paper or the like.

This intermediate piece 50, toward an upper edge, carries the words "Board Challenged" as indicated at 51, and towards its lower edge carries the words "Time Out for a Drink" as indicated at 52. The letters for these words may be

printed on the intermediate sheet 50 or they may be cut out and stenciled in the sheets whereby when bulbs 53 on the upper portion of the intermediate section are energized the words "Board Challenged" will be clearly visible and when the bulbs 54 in the lower portion of the intermediate section are energized the words "Time Out for a Drink" will be clearly visible.

Partitions 55 and 56 of metal or other opaque material block off the words 51 and 52 from one another and from the mid portion of the section 20. It will also be understood that the mentioned words at 51 and 52 appear in the intermediate paper or layer 50 at each side of the score board, the object being that anything readable from one side of the score board is equally visible from the other side thereof. The partitions 55 and 56 define the upper and lower sides of a compartment 57 and located within such compartment is a movable advertising carrying means shown as a drum 58. This drum is shown in the drawing as cylindrical, although it will be understood that it may be rectangular, or in any other form having a plurality of flat sides.

At different places about the drum 58, a series of advertisements are placed. Preferably, the drum itself is opaque with the advertisements formed by transparent or translucent portions of the drum so that on light bulbs 59, within the drum, being energized any advertisement otherwise exposed will be visible from the sides of the score board.

The intermediate sheet or layer 50 of each of the laminated structures on the intermediate portion 20 of the score board has a slot cut therein through which any portion of the drum may be exposed when brought opposite such slot. The advertisements need not be arranged diametrically opposite one another on the drum so it may be that different advertisements will appear at different sides of the score board.

Means are provided for rotating the drum step-by-step so as to bring different portions thereof opposite the cleared panels or slots of the layers 50 of the mentioned laminated structures. Thus, in one position of the drum there may be the advertisement of one company or for one material while in the next position there is an advertisement for another company or other material, etc.

The drum is carried on a shaft 60 one end of which is received within a socket or bearing 61 containing a coil spring 62 normally tending to project the shaft from the bearing. In its other end the shaft 60 has a socket 63 receiving a square or other non-circular shape of stud 64 carried by a rotatable member or short shaft 65 of an apparatus for use in turning the shaft and thus the drum 58.

The mechanism for imparting step-by-step movement to the drum 58 is generally indicated at 66 and includes a ratchet wheel 67 fast to the stud shaft 65. A U-shaped frame 68 carries a plate 69 held in spaced relation to the right portion of the frame by means of bolts 70 and spacers 71. On the forward side of the plate 69 is a contact ring 72 having a lead 73 connected therewith as at 74 and this ring is engaged by a contact 75 carried by the drum having a connection 76 through which the bulbs 59 may be energized. Obviously, the contact 75 is in engagement with the face of the ring 72 in all positions of the drum, said ring being concentric with the drum.

A magnet 77, when energized, serves to pull downwardly on a pawl 78 and as said pawl is so moved, it engages a tooth of the ratchet 67 moving the latter through an arc represented by one or more of the ratchet teeth and imparting similar movement to the drum. Coil springs 79 and 79a return the pawl on the magnet being de-energized.

A pivotally mounted pawl 80 operates to hold the ratchet 67 in any position to which it is advanced and such pawl 80 is held in ratchet engaging position as by a coil spring 81. From the foregoing, it will be understood that on magnet 77 being energized the drum 58 will be rotated one step so as to bring any advertisement or any advertisements opposite the above described slots in the intermediate layer of paper or the like 50 of the laminated structures closing the opposite sides of the compartment 57.

On the upper side of the score-board 12 are a pair of housings 82 and 83 in which are bulbs 84 and 85, respectively. The opposite sides of these housings are closed by transparent or translucent panels 86 and the panels of housing 82 are of one color, as green, and the panels of housing 83 are of another color, as red, whereby the housings include a signal means corresponding in color to the playing pieces used on the board 10. The manner in which, and the times at which, the bulbs within the housings 82 and 83 are energized, will be set forth.

Within the box 11 are preferably located three controls generally designated 87, 88 and 89, respectively, and shown in the wiring diagram of Fig. 6. Referring particularly to said figure, the lead-in wires 90 and 91 form a suitable source of current, include a fuse 92 and a main switch 93, and are connected with a transformer generally designated 94. A pair of convenient outlets 95 may be connected with the lines 90 and 91, it being understood that normally such lines would carry 110 volts so that said outlets may be used to furnish a supply of current for trouble lamps or the like.

From the transformer 94, we have a 24 volt line 96 and a 6 volt line 97 and in such lines are fuses 98 and 99, respectively. The 24 volt line supplies the energy for the operation of the various relays to be described, while the 6 volt line 97 supplies the current for the various light bulbs employed. The stepping relays 87 and 89 are duplicates of one another and the same reference characters have been applied to the similar parts in the two devices.

Thus, each relay includes an insulating disc-like mounting 100 carrying twenty-one contacts from which extend the wires 101 which are carried through the conduit 13 to the score board 12. The wires from the relay 87 are carried to the bulbs 27 in the compartments 1-21 of the score board section 21 while the wires 101 from the relay 89 are carried to the bulbs 37 within the compartments 1-21 of the score board section 22.

The various contacts to which the wires 101 are connected are located in an arc on the center of which is pivotally mounted a contact arm 102 concentric with a ratchet wheel 103 and adapted to be moved with such ratchet wheel. Wheel 103 is to be given a step-by-step movement as a solenoid 104 is repeatedly energized. To the desired end, such solenoid has its core 105 connected with an arm 106 pivoted at 107 and carrying a pawl 108 pivotally mounted thereon. A coil spring 109 serves to maintain the pawl 108 against the ratch-

et wheel 103 and to return the arm 106 to its normal position against the stop 110.

With this construction, it will be seen that as the solenoid magnet 104 is energized, its core will be drawn inwardly and will rock the arm 106 so as to have the pawl 108 advance the ratchet 103 one step. The ratchet is spring loaded as it is moved by the pawl 108 and is held in any advance position and against retroactive movement by a pawl 111 adapted to be shifted to released position by a bar 112 which latter is shifted on energizing of a magnet 113.

Relay 88 includes an insulating mounting plate 114 carrying a series of contacts 115, certain of which are connected electrically by a wire 116. A contact arm 117 is adapted to be rotated by a ratchet 118 about a center concentric with the various contacts. The arm 117 will always be turned in the same direction and is designed to make electrical contact successively with the various contacts 115. That is, each time the ratchet 118 is advanced one step, the arm 117 will be advanced a step and will make a contact with the next contact 115 on the disc 114.

The means for advancing the ratchet 118 includes a solenoid magnet 119, the core 120 of which is connected with an arm 121 pivoted at 122. Arm 121 carries a pawl 123 engaging the teeth of the ratchet 118 whereby each time the magnet 119 is energized, the arm 121 is rocked and carrying the pawl with it will advance the ratchet one tooth. A spring loaded ratchet 124 prevents retrogressive movement of the ratchet wheel. As shown, a lead 125 connects with the contact arm 117 and as such arm successively engages the various contacts 115, a circuit is completed to them and thus to the wire 116.

Here it is noted that the wire 116 is not connected with each of the contacts 115 but skips some of them so that for the present purpose, certain of the contacts 115 may be regarded as duds. Wire 116, however, is connected by a lead 126 with the magnet 77 of the means 66 for advancing the drum 58 in step-by-step movement.

The means 14 and 15 are similar but for clarity of further description their various parts have been given separate reference characters. Thus, the means 14 includes a housing 127 on the upper side or edge of which are mounted a pair of toggle switches 128 and 129 and a lens 130. This lens will be colored in accordance with the playing pieces used by the player or players operating from the adjacent end of the shuffle board 10. Under the lens 130 is a light bulb (see Fig. 6) 131.

On the face of the housing 127 are upper and lower lenses 132 of the same color and other upper and lower lenses 133 also of the same color. The lenses 133 may correspond in color with the lens 130 and in the rear of the lenses 133 are light bulbs (see Fig. 6) 134 and 135 while in back of the lenses 132 are light bulbs 136 and 137. The color of the lenses 132 will agree with the color of the playing pieces used by the player or players at the remote end of the table 10.

Also extending through the forward face of the housing 127 are the buttons or manuals of two pole switches 138 and 139 while below and in line with such buttons or manuals are buttons or manuals of other switches 140 and 141 which in the use of the present mechanism are reset switches.

The device 15 includes a housing 142 on the upper side of which is a lens 143 which is preferably colored in accordance with the color of the playing pieces used by the player or players oper-

ating from that end of the table 10 which is adjacent the device 15. Under the lens 143 is a bulb 144 (see Fig. 6). Also, there are pairs of lenses 145 and 146 on the face of the housing 142 and preferably colored in accordance with the color of the lens 143. In back of lenses 145 and 146 are bulbs 147 and 148. A pair of lenses 149 and 150, also in the face of the housing 142, are located over bulbs 151 and 152. The lenses 149 and 150 are preferably colored to correspond with the lenses 133 of the device 14 and the lenses 145 and 146 are preferably colored to correspond with the lenses 132 of the device 14.

Between the lenses 145 and 146 are the manuals of a double pole switch 153 and of a single pole reset switch 154, respectively. Between the lenses 149 and 150 are the manuals of a double pole switch 155 and a single pole reset switch 156, respectively.

The bulb in the first compartment 24 and over which is the letter "O" are in a circuit different from the bulbs in the other compartment of the upper section of the score board and for the purpose of convenience has been designated 157. Similarly, the bulb in the compartment 35 in back of the letter "K," or the first compartment 35, is in a circuit separate from the bulbs of the other compartments of the score board section 22 and for the purpose of convenience has been designated 158. The bulbs 157 and 158 are connected with the 6 volt wire 97 by a lead 159 and with a return wire 160 by a lead 161. As the description proceeds, it will become clear that the return wire 160 is a common return for various elements of the present apparatus.

Bulbs 157 and 158 being connected in circuit as described, it will be clear that on closing of the main switch 93 these bulbs will be energized and illuminating the symbols "O" and "K" will indicate that the score board apparatus of the invention is ready for use.

The device 19 includes a switch 162 and a bulb 163 over which is a lens 164. This device 19 may be at some point remote from the other parts of the apparatus and is preferably under the control of the custodian of the game board. Closing the switch 162 energizes the light bulbs 53 in back of the words "Board Challenged" so as to make such words distinctly visible. The idea here is that if the board is in use and another person or other persons feel they are entitled to a chance to use the board, they speak to the caretaker and he closes the switch 162 illuminating "Board Challenged." This means that at the end of the game in progress the losers must give way to the challengers.

The lead from the switch 162 is designated 165 and is through conduit 18 while the return wire from the bulbs 53 is designated 166. However, as the description proceeds, it will become evident that this wire 166 is also the return wire for other parts of the apparatus.

Associated with the mechanisms 87 and 89 are switches 167 and 168 respectively. These switches each include contact arms 169 and 170 adapted to be brought into engagement to close a circuit to the bulbs 54 for the purpose of illuminating the sign reading "Time Out for a Drink." For the purpose of closing the switches 167 and 168, each of the ratchet wheels 103 carries a pin or a lug 171 arranged to engage the contact arm 170 of a switch and bring it into circuit closing relation with the contact arm 169 of said switch.

There is but one of these pins 171 on each

ratchet wheel 103 and the pin is so located that it will not close the switch associated with said ratchet wheel until the ratchet wheel has carried the contact arm 102 of its mechanism into engagement with the twenty-first of its contacts connected with the wires 101. Thus, it will be understood that when the twenty-first wire 101 of either the mechanisms 87 or 89 is energized so as to light or illuminate the bulb in the rear of the number twenty-one on either the upper or lower section of the score board, a circuit is closed to the bulbs 54 and the "Time Out for a Drink" sign is illuminated or made easily visible. Thus, this sign is brought into prominence only at the end of the game when one player or one set of players has won the game.

Assuming the apparatus to be completely set up and the switch 93 closed, the bulbs 157 and 158 in the rear of the letters "O" and "K" will be energized to indicate that the apparatus is ready for use. At this time, the various bulbs 131, 134, 135, 136 and 137 of the device 14 and the bulbs 144, 147, 148, 151 and 152 of the device 15 will also be energized. The circuit to the first set of bulbs is through a line 172 with which the bulb 131 is connected by wire 173 and the bulbs 134 and 136 are connected by wires 174 and 175, respectively. From the wire 172, a lead 177 is carried and connected with the bulbs 135 and 137 by wires 178 and 179. A lead 180 to the return wire 181 is connected with the bulbs 135 and 137 by wires 182 and 183 and the return wire 181 is connected to the common return wire 160.

Somewhat similarly, the 6 volt wire 99 is connected by a wire 184 with the bulbs 148 and 152, and is connected by a lead 185 with the bulbs 147, 151 and 144. The return wire from all of these bulbs is designated 186 and is connected with the common return 160. Thus, it will be seen that on closing of the switch 93, all of the bulbs 157, 158, 131, 134, 135, 136, 137, 144, 147, 148, 151 and 152 are energized.

The switches 138 and 155 control the same circuit and the switches 139 and 153 control the same circuit. Thus, from either of the devices 14 and 15, circuits may be closed to the stepping relays 87 and 89. The switches 138 and 155 control the relay 87 while the switches 139 and 153 control the relay 89. This arrangement is used since either set of playing pieces may be used from either end of the game board depending on how the game is started, and it is therefore more convenient to have an arrangement where the player may register his score from that end of the game board at which he finds himself.

Similarly, the reset switches 140 and 156 in the devices 14 and 15, respectively, control the reset magnet 113 of the relay 87 while the switches 141 and 154 of the respective devices 14 and 15 control the reset magnet 113 of the relay 89.

For the purpose of further description, it will be assumed that the players using the playing pieces designated "O" are to register their scores according to the various numbers associated with the compartments in the upper section 21 of the score board and for this purpose are to use the switches 138 and 155 and the reset switches 140 and 156, and that the players using the pieces identified with the letter "K" are to register their scores on the lower section 22 of the board and are to use the switches 139 and 153 and the reset switches 141 and 154. Further, let us assume that the players are in their places at the re-

9

spective ends of the board 10, their positions being indicated by the letters "A" and "B."

Now the player "A" takes a turn and if he has scored three points he will close the switch 138 three times. Each time he closes the switch a circuit is completed from the 24 volt wire 96 through a wire 187 to a wire 188 and through a wire 189 to the magnet 104 of the relay device 87. The connection to the return wire 181 is through a wire 190. Each time the magnet 104 is energized, the pawl 108 is actuated to advance the ratchet 103 one step and each time it is so advanced, the arm 102 is moved to a new contact thus closing a circuit to another one of the wires 101.

The first time the switch 138 is closed the light bulb 27 in back of the indicator 1 is energized and the next time the switch is closed, that bulb is extinguished and the bulb in back of the indicator 2 is energized. In this way, the score is registered so that if a switch is closed three times, the bulb in back of the indicator 3 will be the one that remains energized. These scores will be registered in the upper section 21 of the score board.

Now the player "B" takes his turn and he closes the switch 153 one or more times to register his score in the score board section 22. When the switch 153 is closed, it is closed through a lead 191 from the 24 volt wire 96 through the switch to a wire 192, then through a wire 193 to the solenoid magnet 104 of the relay 89. The return is through a wire 194 to the common return 160. Obviously, each time the magnet 104 of the relay 89 is energized, the contact arm 102 of such relay is advanced one step or to a successive one of the contacts of said relay. In this connection, it will be understood that the wires 191 from the relay 89 are connected with the bulbs in the lower score board section 22.

Closing of the switch 138, in addition to establishing the circuit through the relay 87, establishes a circuit through a wire 195 to a wire 196 leading to the solenoid magnet 119 of the relay device 88. The return is through a wire 197 to a wire 198 in turn connecting with the return wire 181 previously mentioned. In like manner, on closing of the switch 153, a circuit is closed through a wire 199 also connected with the wire 196. Thus, on the closing of either switch 138 or switch 153, a circuit is closed to the solenoid magnet 119 of the relay device 88. This, as previously explained, brings about movement of the contact arm 117 to close the circuit through the wire 125 to one of the contacts 115.

When the contact 115, with which the arm 117 comes into engagement, is one of those connected with the wire 116, a circuit is closed through the wire 116 to the magnet 77 whereby the advertisement carrying drum 58 is advanced a step. Should it happen that the arm 117 is brought into engagement with one of the dud contacts 115, or one of such contacts which is not connected with the wire 116, no circuit will be closed to the magnet 76 and the drum will remain in position. Thus, the players will not know when they close one of the switches 138 or 153 to record a score whether or not the advertisement on the board 12 will be changed. The return from the magnet 76 is through a wire 200 to a wire 201 connected with the return 163 previously mentioned.

Closing of the switch 155 gives the same results as the closing of the switch 138. Thus, when the switch 155 is closed, a circuit is com-

10

pleted through a wire 202 to the wire 189 and also to the wire 199 and the wire 196 to the magnet 119 of the device 88. Closing of the switch 139 gives the same results as the closing of the switch 153. Thus, on the closing of switch 139, a circuit is completed to the wire 195 and through the wire 196 to the magnet 119. Also, a circuit is completed through a wire 203 and thence through the wire 193 to the magnet 104 of the relay 89.

From the foregoing, it will be seen that a player may readily register his score from either end of the playing board 10. Additionally, it will be understood that a player at either end of the board 10 can readily check on a score being registered by any other player since the scores, as registered, are visible at both sides of the score board 12.

When one or the other of the players registers a score of 21, then the pin 171 moves the arm 170 (of either the device 87 or device 89, depending on which player is registering a score) into circuit closing relation with the contact 169. This closes a circuit from the wire 172 through a wire 204 to a wire 205 leading to the wire 173 and thus to the light bulbs 54 for illuminating the sign "Time Out for a Drink." The return is through the lead 166. The above is in respect to the switch 167. When the final score is registered through operation of the relay 89 when the switch 168 is closed, the circuit is then through the wire 206, the switch elements 169 and 170 and the wire 73 previously mentioned.

At the end of the game, the score board is reset by closing either the switches 140 and 141 or the switches 156 and 154. As the switch 140 is closed, a circuit is completed from the line 187 through to a line 207, which through a line 208 is connected with the relay magnet 113. The return for such magnet is designated 209 and connected with the return 181 previously identified. When the magnet 113 is energized, the pawl 141 is shifted to inoperative position and the spring which was wound or loaded during advance of the ratchet wheel 103 returns such ratchet wheel and parts carried thereby to a starting position.

Closing of the switch 156 completes a circuit through a wire 210 to the wire 208 to accomplish this same result insofar as the relay is concerned. Closing of the switch 141 completes a circuit to a wire 211 connected with the wire 212 leading to the relay magnet 113 of a relay mechanism 89. The return is through the wire 213 to the common return 160. The closing of the switch 154 gives the same results in that it completes a circuit through a wire 214 to the wire 212. Thus, closing of either of the switches 141 or 154 energizes the magnet 113 of the device 89 so that the spring wound or loaded by advance movement of the ratchet 103 of said device returns such ratchet and associated parts to starting position. It will be understood that the return to starting position need not be step-by-step since the reset switches would simply be held momentarily closed.

It is thought the foregoing description will serve to make clear the operation of the device during the playing of a regular game. Sometimes, the board 10 is used in playing half games, by playing two out of three, etc. In such instance, assuming that the player or players using the green pieces has won one game. Then a score keeper or referee or the like will close one of the toggle switches 128 and

129 to light either the bulb 84 or the bulb 85 located in either the housing 82 or the housing 83. That is, the toggle switch which is closed will depend on whether the one game has been won by the "greens" or the "reds" and the housing 82 or 83 having the corresponding color of panels 86 will be illuminated. This condition will remain during the playing of the second game so that if the second game is won by the same person or team, there is no question as to who is the victor. If the second game is won by the other team, then both of the signal devices 82 and 83 will have their bulbs energized and the final decision will depend on the outcome of the third game.

Having thus set forth the nature of my invention, what I claim is:

1. In a display apparatus, a body including an intermediate section and upper and lower sections, a corresponding number of individual compartments in each of said upper and lower sections, indicators for each of said compartments and at each side thereof, means in each of said compartments and adapted when energized to make clearly visible the indicators at both sides of the compartment, means to successively energize said means of a selected section, a movable means in said intermediate section carrying advertisements and adapted to be brought into registry with windows in the section, means to advance said movable means to bring various of said advertisements into registry with said windows, and means to automatically energize said movable means advancing means on the energizing of predetermined ones of said means.

2. In a display apparatus, a body including an intermediate section and upper and lower sections, a corresponding number of individual compartments in each of said upper and lower sections, indicator means for each of said compartments and light bulbs adapted when energized to illuminate the indicators at both sides of the compartment, means to successively energize the light bulbs of a selected section, a movable means in said intermediate section and carrying advertisements adapted to be brought into registry with windows in the section, means to advance said movable means step-by-step to bring various of said advertisements into registry with said windows, and means to energize said movable means advancing means on the energizing of predetermined ones of said light bulbs.

3. In a display apparatus, a body including an intermediate section and upper and lower sections, a corresponding number of individual compartments in each of said upper and lower sections, indicator means for each of said compartments and at each side thereof, a light bulb in each of said compartments and adapted when energized to illuminate the indicators at both sides of the compartment, means to successively energize the light bulbs of a selected section, a movable means in said intermediate section and carrying advertisements adapted to be brought into registry with windows in the section, means to advance said movable means to bring various of said advertisements into registry with said windows, means to energize said movable means advancing means on the energizing of predetermined ones of said bulbs, said body carrying a message, a bulb for illuminating said message, and means for automatically closing a circuit to said bulb on the bulb of a predetermined compartment being energized.

4. In a display apparatus, a body including an intermediate section and upper and lower sections, a corresponding number of individual compartments in each of said upper and lower sections, indicator means for each of said compartments and at each side thereof, a light bulb in each of said compartments and adapted when energized to illuminate the indicators at both sides of the compartment, means to successively energize the light bulbs of a selected section, a movable means in said intermediate section and carrying advertisements adapted to be brought into registry with windows in the section, means to advance said movable means to bring various of said advertisements into registry with said windows, and means to energize said movable means advancing means on the energizing of predetermined ones of said bulbs.

5. In a display apparatus, a body including a plurality of sets of indicators, means associated with each indicator of each set and adapted on being energized to render the same readily visible, means for successively closing circuits to the means of the selected set, a movable means associated with said body and mounted for turning movements and carrying advertising signs, means to impart a step-by-step turning movement to said movable means, and means to energize the means for imparting turning movement to the movable means on the closing of circuits to predetermined ones of the first mentioned means.

6. In a display apparatus, a body including an intermediate section and upper and lower sections, a corresponding number of individual compartments in each of said upper and lower sections, indicator means for each of said compartments and at each side thereof, a light bulb in each of said compartments and adapted when energized to illuminate the indicators at both sides of the compartment, means to successively energize the light bulbs of a selected section, a movable means in said intermediate section and carrying advertisements adapted to be brought into registry with windows in the section, means to advance said movable means to bring various of said advertisements into registry with said windows, means to energize said movable means advancing means on the energizing of predetermined ones of said bulbs, said body carrying a pair of spaced messages, separate bulbs for illuminating the respective messages, means for automatically closing a circuit to the bulb for illuminating one of said messages on a predetermined indicator being energized, and manual means for closing a circuit to the bulb for illuminating the other of said messages.

FRIEDRICH H. BERTELSMEYER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
546,499	Warren	Sept. 17, 1895
996,224	Dennis	June 27, 1911
1,119,371	Reilly	Dec. 1, 1914
1,755,212	Favarger	Apr. 22, 1930
1,911,949	Could	May 30, 1933
1,922,517	Amory	Aug. 15, 1933
2,248,095	Lande	July 8, 1941
2,275,797	New	Mar. 10, 1942
2,296,508	Eckert	Sept. 22, 1942