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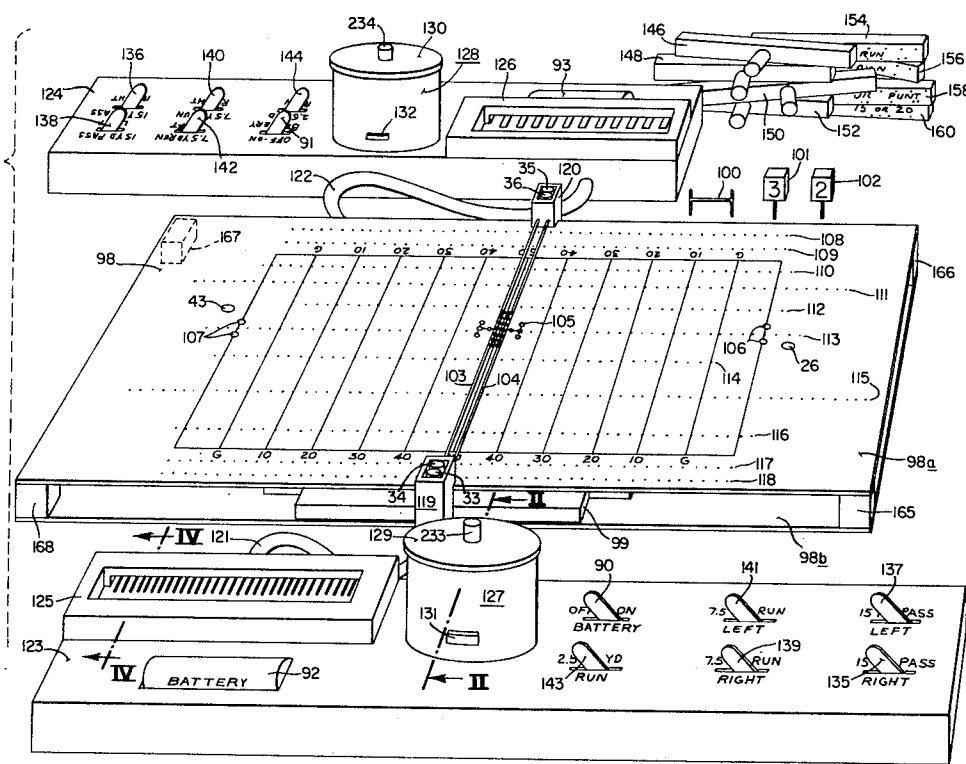
[54] **ELECTRIC FOOTBALL GAME WITH OFFENSIVE, DEFENSIVE, AND CHANCE SELECTION MEANS**
12 Claims, 9 Drawing Figs.

[52] U.S. Cl. **273/94**
[51] Int. Cl. **A63f 7/06**
[50] Field of Search **273/85(G), 88, 94**

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ABSTRACT: An electrically-operated simulated football game apparatus is disclosed having a network of perforations in the playing field for passage of light selectively therethrough. Mounted below the field is a slidable scrimmage-line board carrying light bulbs at selected locations on either side of the scrimmage line corresponding to ball positions to be gained (or lost) upon completion of an offensive play. Upon completion of each offensive play, one (and only one) of the lamps becomes illuminated which, relative to the scrimmage line, corresponds to a gain, or no gain, or a loss. The play is made by the offensive player spinning a spinner-type rotary switch, to close a circuit to one (and only one) lamp. Prior to spinning the spinner, the offensive player, by selecting and inserting, into a junction box, one of a number of cross-connection blocks (corresponding to one of a number of offensive plays) establishes the probability of completion of the circuit to the desired lamp, corresponding to the desired ball position to be attained. Concurrently, the defensive player, not knowing which offensive play has been selected by his opponent, operates one of several defensive switches (corresponding to one of several defensive plays) and, by selecting the right defensive play, reduces the probability of successful completion of the chosen offensive play.



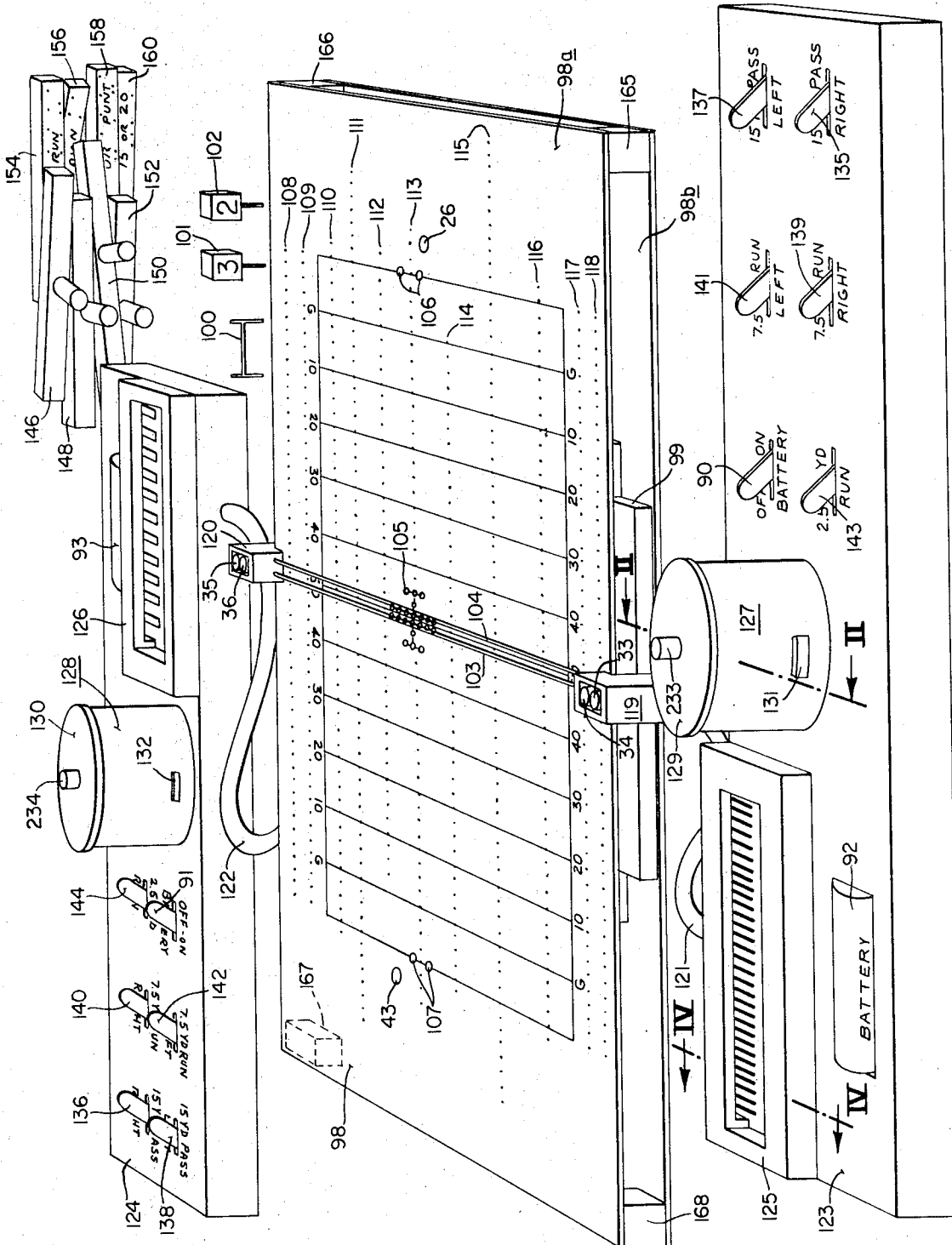


Fig. 1

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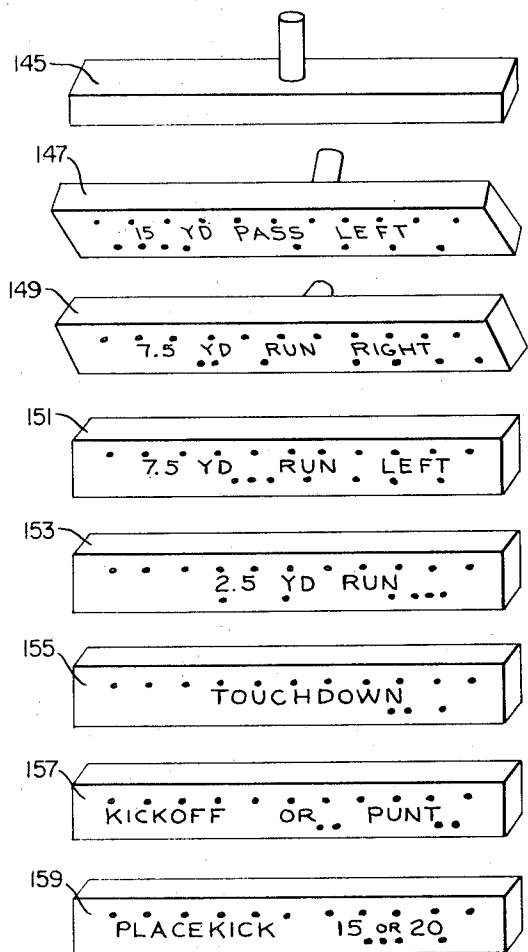


Fig. 9

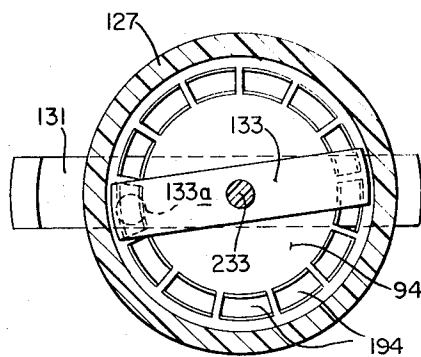


Fig. 3

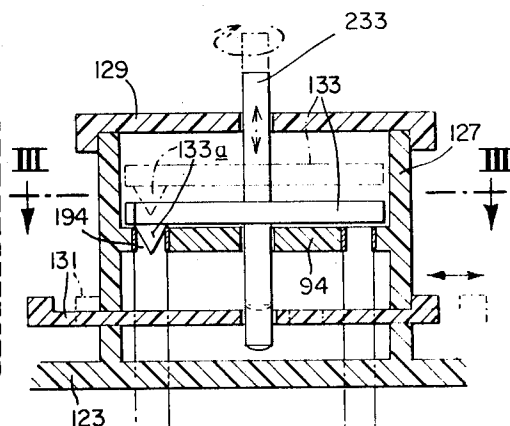


Fig. 2

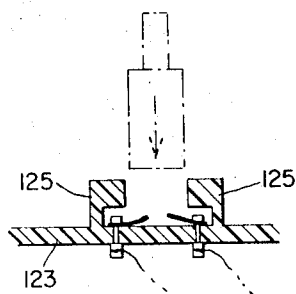


Fig. 4

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Fig. 5

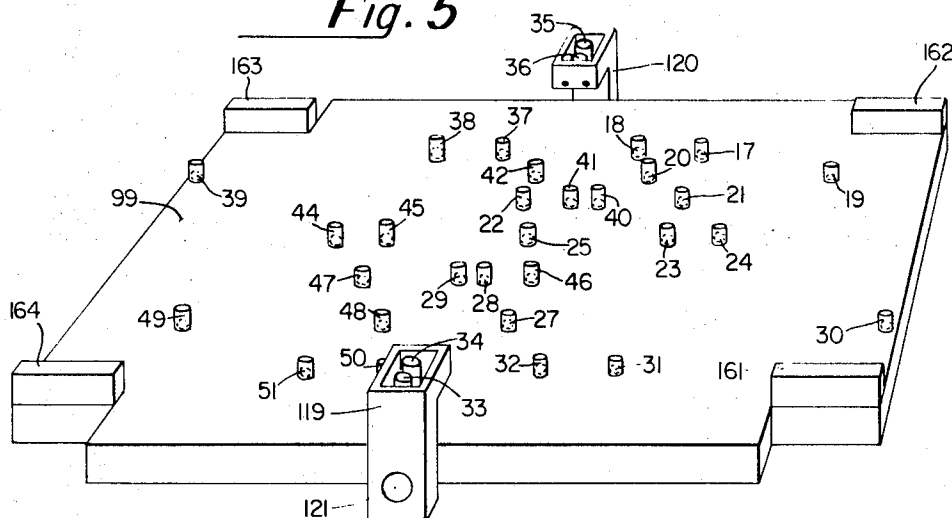


Fig. 6

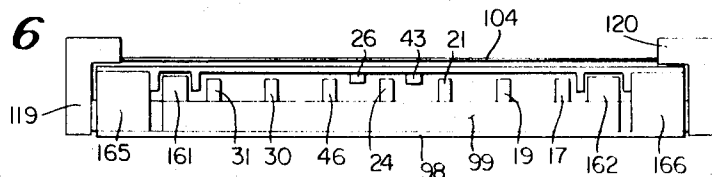
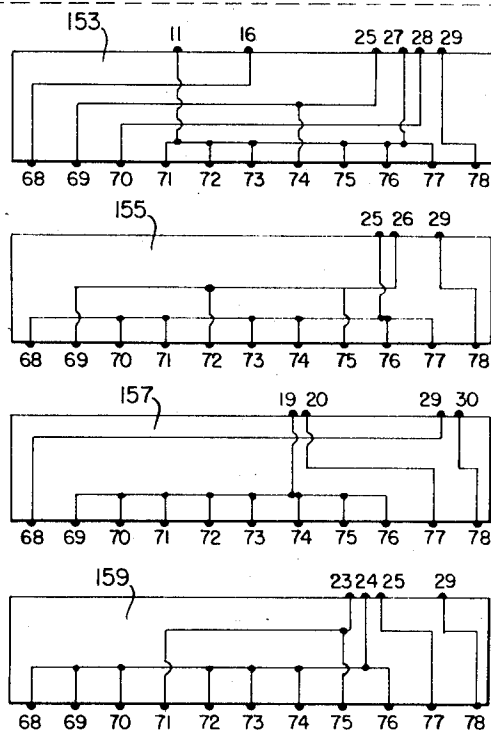
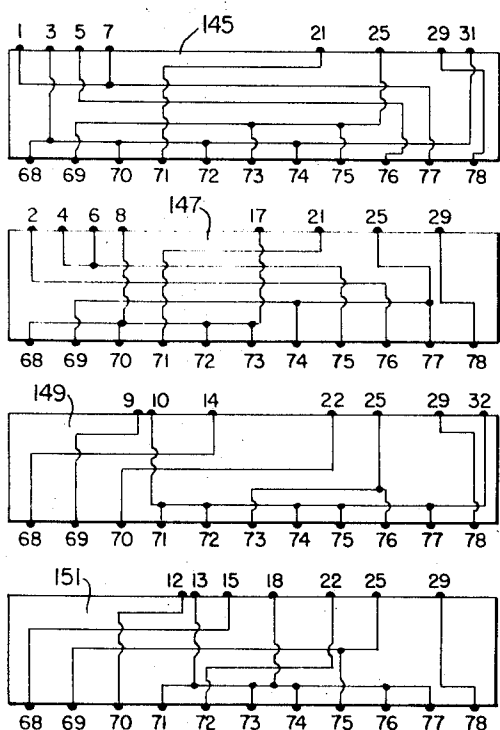


Fig. 7



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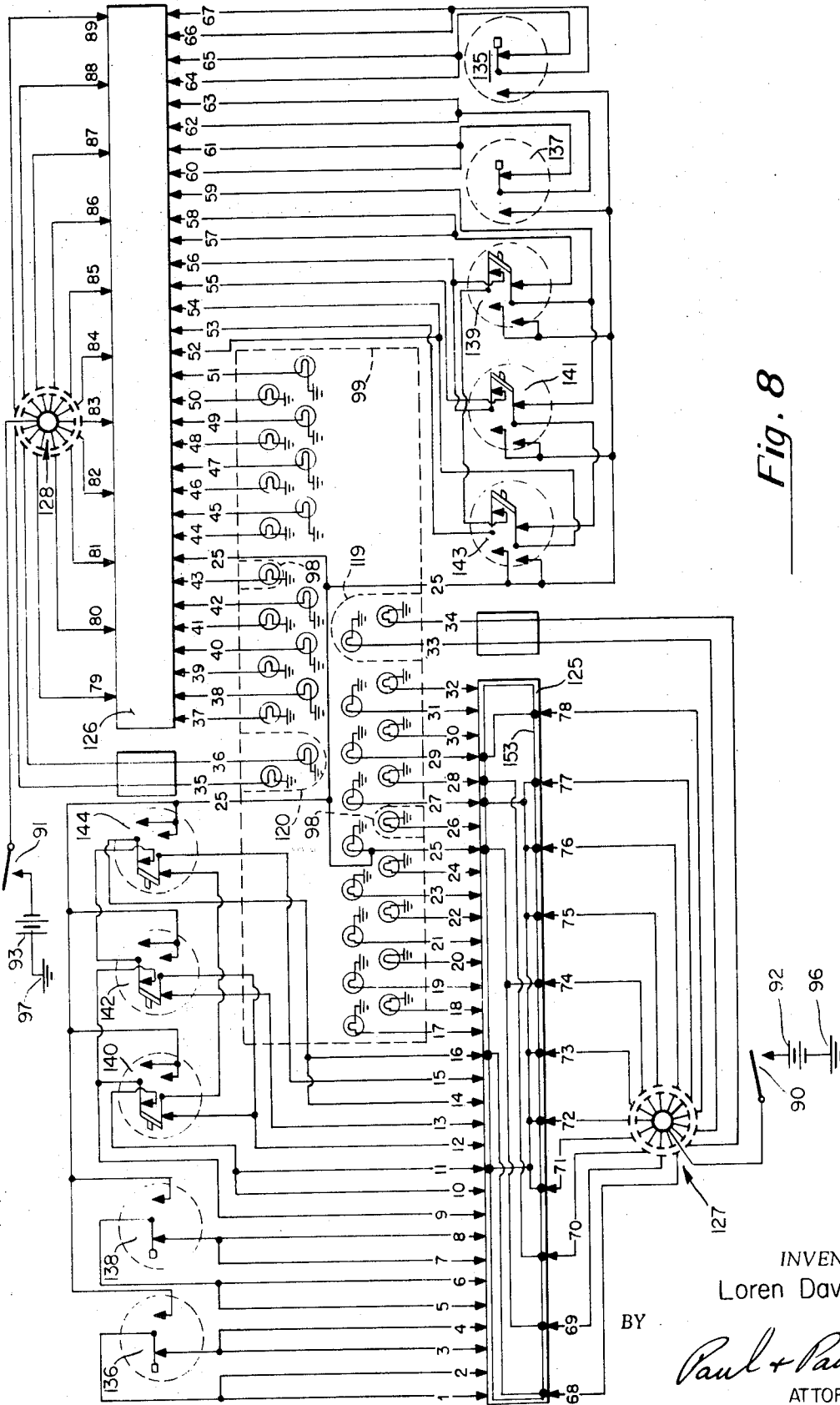


Fig. 8

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ELECTRIC FOOTBALL GAME WITH OFFENSIVE, DEFENSIVE, AND CHANCE SELECTION MEANS

FIELD OF THE INVENTION

This invention relates to an indoor game, and in particular to an electrically-operated simulated football game. However, the general type of simulation disclosed may also be applicable to games other than football.

DESCRIPTION OF THE PRIOR ART

A search of the prior art disclosed the following prior art U.S. Pats.: Morrison et al. 2,275,306; Tassano 2,276,599; Siegel 2,873,971 and Schuh et al. 3,046,015.

The football game of the present invention is different from any of the game apparatus of the above prior art patents.

SUMMARY OF THE INVENTION

In accordance with a preferred form of the invention, a simulated football field is provided with spaced-apart holes in spaced-apart rows running lengthwise of the field. A board carrying light bulbs is mounted for sliding movement below the field and is movable in directions corresponding to the lengthwise direction of the field. The lamps carried by the movable board are located at selected positions on both sides of a transverse center line corresponding to the scrimmage line. The lamp locations correspond to ball positions to be attained. The lights on the one side of the scrimmage line are of one color, and on the other side of the scrimmage line are of another color except where change of possession of the ball is indicated. Electrical circuits connect each lamp to a different one of a plurality of terminals located along one side of a recess in a junction box. Defensive switches are connected to other terminals on the same side of the junction-box recess. On the opposite side of the junction-box recess is a plurality of terminals each connected to a separate contact of a spinner-type rotary switch. There are no connections between the terminals located on opposite sides of the junction-box recess until the offensive player inserts a selected cross-connection block into the recess. The selected cross-connection block is identified with a certain offensive play and establishes the probabilities that the circuit to the desired lamp (corresponding to the desired ball position) will be closed when the spinner is rotated. The defensive player selects and operates one of a plurality of defensive switches in an attempt to decrease the probability that the electrical circuit which is ultimately completed by the rotary-switch spinner will illuminate a lamp corresponding to the desired gain and to increase the probability that the "no gain" lamp will be energized. When the rotating spinner comes to rest, one and only one lamp becomes energized. This locates the position of the ball as a result of the offensive play just completed, or indicates that a penalty has been assessed. The color of the lamp indicates whether possession of the ball has changed hands, as by pass interception or fumble recovery.

In summary, the football game apparatus of the present invention provides means for the offensive player to select one of a plurality of offensive plays, and means for the defensive player to select a defense against the unknown offensive play. Random-play means are provided, operated by the offensive player, in the form of a spinner which, when it stops spinning, closes an electrical circuit and illuminates one, and only one, of a plurality of lights to show the position on the football field to which the ball has been moved by the particular offensive play, or to show that a penalty has been assessed. While the circuit which is closed is a random determination by the spinner, the closed circuit includes, and is therefore affected by, the offensive play freely chosen by the offensive player, and is also affected by the defensive play freely chosen by the defensive player.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a diagrammatic perspective view showing the various components of the game assembled for play;

FIG. 2 is an elevational view, in section, of the spinner looking along the line II-II of FIG. 1;

FIG. 3 is a plan view, in section, of the spinner looking down along the line III-III of FIG. 2;

FIG. 4 is an elevation view, in section, of the offensive junction box looking along the line IV-IV of FIG. 1;

FIG. 5 is a perspective view of the slidable scrimmage-line board showing the positions of the lamps mounted therein;

FIG. 6 is an elevational view of the scrimmage-line board looking in from the right in FIG. 5;

FIG. 7 shows the schematic wiring diagrams for the eight cross-connection blocks available for selection by the offensive player;

FIG. 8 is a complete wiring diagram showing the connections to the lamps through the spinner-type rotary switch to the battery; and

FIG. 9 illustrates the cross-connection blocks.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 shows all parts of the invention assembled for playing the game. The platform 98 consists of two flat rectangular sheets, an upper sheet 98a and a lower sheet 98b held together at the four corners by corner blocks 165-168. The surface of the upper sheet 98a serves as the playing field. In the upper sheet 98a are 11 rows of holes 108-118 running in the lengthwise direction of the field. All holes of each row are 2.5 scale yards apart, measured lengthwise of the field. Rows 108 and 118 are for the linesman's sticks 101 and 102. These are used to mark the position of the ball and to indicate the number of the down. Rows 109 and 117 are for the 10-yard marker 100 which spans across four holes and which may be inserted through any one of the holes of rows 109 or 117.

A boxlike frame 99 is positioned for sliding lengthwise movement between the sheets 98a and 98b. The slidable frame 99 carries a plurality of light bulbs, as seen in FIGS. 5 and 6. A fixed light bulb 26 recessed in the surface of 98a, when lighted, corresponds to a touchdown for one of the teams. A second fixed light bulb 43 recessed in the sheet 98a, when lighted, corresponds to a touchdown for the other of the teams. Points 106 and 107 represent the goal posts.

The frame 99 is a boxlike structure which is slidable between the sheets 98a and 98b. Secured to frame 99 are side pieces 119 and 120 located on the transverse center line of the frame 99 and containing the recessed light bulbs 33-34 on one side of the field and the light bulbs 35 and 36 on the other side. Rods 103 and 104 are suspended over the playing field between 119 and 120. Resting on rods 103 and 104 is a framework carrying twenty-two silhouettes identified comprehensively as 105, representing the two teams. Since the teams 105 are facing each other along the yard line located between rods 103 and 104, the line of scrimmage is thus identified, and is made to follow the ball up and down the field during the play by sliding frame 99 within platform 98. The teams 105 may be moved laterally along 103-104.

Fixed in the surface of frame 99 are a plurality of electric lamps or light bulbs, as seen in FIGS. 5 and 6. These light bulbs are encased in open upper ended but otherwise opaque cylindrical shells to prevent diffusion of light to the sides and to concentrate the light emission upward. Wiring for these bulbs is located inside frame 99, where it is joined by wiring from touchdown bulbs 26 and 43, and wiring from scrimmage-line bulbs 33, 34, 35 and 36.

As shown in FIG. 8, the wiring is divided into two parts, each part leading to and being contained in one or the other of two flexible cables 121 or 122. These cables emerge through orifices in side pieces 119 and 120, and lead to the players consoles 123 and 124, as seen in FIG. 1.

Consoles 123 and 124 are identical and hold the following identical equipment: Batteries 92 and 93; on-off switches 90 and 91; junction boxes 125 and 126 which contain electrical contacts for all offensive plays; defensive switches 135, 137, 139, 141 and 143 and 136, 138, 140, 142 and 144 which, when selected and operated, defend against the plays indicated; and the play starters or spinners 127 and 128.

Also shown in FIG. 1 are eight offensive play blocks for one of the players of the game, these being 146, 148, 150, 152, 154, 156, 158 and 160. The eight offensive play blocks for the other player are shown in FIG. 9, and numbered 145, 147, 149, 151, 153, 155, 157 and 159. Each is labeled with the offensive play it represents. Correspondingly labeled blocks in the two groups are identical and interchangeable. Block 145, at the top of FIG. 9, is for the play "15 YD. PASS RIGHT," block 147 is for "15 yd. PASS LEFT," etc. Each block has two rows of protruding electrical contacts. There are eleven contacts in one row, and varying numbers of contacts in varying positions in the other, as seen in FIGS. 7 and 9. Blocks 146—160 and 145—159 function as cross-connecting blocks to complete certain circuits through the junction boxes 125 and 126.

During the course of a play, one of these cross-connection blocks is placed in junction box 125, assuming the player in control of console 123 is on the offensive. When the block is in place, its eleven contacts close against the eleven contacts on the near side of junction box 125. On the opposite side of junction box 125 are thirty-two contacts, the particular selected cross-connection block, when in place, contacts only certain ones of these thirty-two contacts. FIG. 8 illustrates the 2.5 yd. run play block 153 in place in junction box 125.

FIG. 2 shows an elevational view, in section, of the spinner 127 looking along line II-II of FIG. 1. FIG. 3 is a view looking down along line III-III of FIG. 2. A conical electrical contractor 133a of conductive material projects down from one end of spinner arm 133 of nonconducting material. When the spinner arm 133 comes to rest and is lowered, as described below, the contractor 133a makes electrical contact between the two spaced-apart conductive faces of one of the thirteen slots 194 in the nonconductive material 94. To spin the spinner arm 133, the spinner shaft 233 may be raised, removing contractor 133a from the slot and removing the spinner shaft 233 from the center hole in plate 131. Plate 131 may then be pushed to the dotted line position in FIG. 2, and the lower end of the spinner shaft 233 allowed to rest on it. The spinner arm 133 is then spun in raised position, and after it has stopped rotating it is lowered by pushing plate 131 to the solid line position to allow the shaft 233 to drop into the hole in 131. The cone-shaped contractor 133a drops into one of the thirteen slots 194, and in so doing makes electrical contact between the two metallic faces of the randomly-selected slot.

As seen in FIG. 3, the thirteen arcuate slots 194 are arranged in a circle about the center axis of the spinner, in the nonconducting material 94. Conductive material is secured to the inner and outer faces of the slots 194, and as shown in FIG. 8, conductor wires are connected to each of the faces. All of the inner faces are wired to a common lead to an on-off switch 90 leading to a battery 92. Wires from the outer surfaces of each of the thirteen slots 194 run to terminals along one side of junction box 125, also to light bulbs 33 and 34.

In the foregoing description reference has been made to one player's side only. The opposing player has an identical console 124, with an identical spinner 128, an identical offensive junction box 126, identical offensive cross-connection blocks 146—160, and identical defensive switches 136—144.

FIG. 4 is an elevational view along line IV-IV of FIG. 1, showing how the insertion of one of the cross-connection blocks 145—159 into the junction box 125 connects certain terminals on opposite sides of the box.

FIG. 5 shows the position of all light bulbs which are fixed in but which move with the frame 99. Lamps 26 and 43 are not shown since both of these touchdown lamps are fixed to platform 98 as shown in FIGS. 1 and 6. For convenience and ease of reference, each light bulb is given the same reference number as the circuit in which it is connected in FIG. 8. The color of the lamps on one side of the scrimmage line are (with some exceptions such as a lamp corresponding to an intercepted pass) different from those on the other, the color of the lighted lamp indicating which team has possession of the ball. Bulb 25 is located on the scrimmage line and when lighted indicates "no gain." This bulb 25 is shared by both teams, and is, therefore, made of clear glass.

FIG. 7 shows schematic wiring diagrams for cross-connection blocks 145, 147, 149, 151, 153, 155, 157 and 159. These diagrams also apply to the opposing players cross-connection blocks 146, 148, 150, 152, 154, 156, 158 and 160 since the two groups of blocks are identical and interchangeable.

FIG. 8 is a complete schematic wiring diagram for the game apparatus, exclusive of the diagrams for blocks 145—160 shown in FIG. 7, and just referred to above. In FIG. 8, as an example, cross-connection block 153 is assumed inserted in junction box 125.

In the description which follows, reference should be made to FIG. 8, and also to FIG. 7.

With play block 145 (15 yd. Pass Right; Light 31) placed in the recess of junction box 125, and with all of the defensive switches 136—144 in their normal positions (shown in FIG. 8) six of the thirteen leads from spinner 127 are directed to terminal 31 which leads to lamp 31 located (as seen in FIG. 5) to indicate a 15 yd. pass to the right. They are 68, 70, 72, 74, 77 (thru 1, switch 136, and 3) and 76 (thru 5, switch 138, 7, 1, switch 136 and 3). When spinner arm 133 is spun and lowered (with battery switch 90 closed) the probability that lamp 31 will light is 6 to 13. If any one of the defensive switches 140, 142 or 144 are operated, no circuit change will be made here and probability remains 6 to 13. (In playing the game, only one defensive switch is allowed to be operated for any one play.) If switch 138 is operated, lead 76 (which had previously been directed to lamp 31 through terminal 5, switch 38, terminal 7, etc.) will be directed to lead 25 and lamp 25, corresponding to No Gain, and the probability that lamp 31 will light is reduced to 5 to 13. If defensive switch 136 is operated, 76 and 77 will be directed to the No Gain lamp 25, and the probability that lamp 31 will light becomes 4 to 13. Other possibilities with offensive play block 145 in place are as follows: Leads 69, 73 and 75 lead to lamp 25, No Gain. Probability: 3 to 13. With defensive switch 138 operated, probability for lighting the No Gain lamp 25 is 4 to 13. With switch 136 operated, probability for lighting the No Gain lamp 25 is 5 to 13. Lead 71 connects to 21, Pass Intercept, probability: 1 to 13. Lead 78 connects to lamp 29, 5 yd. Loss, probability: 1 to 13. Leads 33 and 34 bypass the junction box and are not affected by the cross-connection block selected by the offensive player. Lead 33 connects to lamp 33, blue penalty of 5 yards, probability: 1 to 13. Lead 34 leads to lamp 34, red penalty of 5 yds., probability: 1 to 13.

With offensive play block 147 in 125, six of the thirteen leads from the spinner are directed to lamp 17, 15 yd. pass to the left. They are 68, 70, 72, 73, 75 (thru 6, 138, and 8) and 76 (thru 2, 136, 4, 6, 138 and 8). Probability for lighting lamp 17 is 6 to 13. If any one of switches 140, 142 or 144 are operated, no circuit changes are made in the above, and the probability for lamp 17 lighting remains 6 to 13. If switch 136 is operated, lead 76 will be directed to lamp 25, No Gain, and the probability for 17 lighting becomes 5 to 13. If switch 138 is operated, leads 75 and 76 will be directed to lamp 25 and the probability for lamp 17 to light will be changed to 4 to 13. Other possibilities and their probabilities are as follows: With no defensive switches operated, or with switches 140, 142 or 144 operated, the probability for lighting lamp 25, No Gain, is 3 to 13. With 136 operated, probability for lighting 25 is 4 to 13. With 138 operated, probability for lighting 25 is 5 to 13. Probability for lighting lamp 21, Pass Intercept, or lighting 29, 5 yd. Loss, or lighting 33, 5 yd. Penalty Blue, or lighting 34, 5 yd. Penalty Red, is 1 to 13 for each case.

With block 149 in junction box 125, seven leads from the spinner are directed to lamp 32, 7.5 Run to the Right. They are 71, 72, 74, 75, 77, 69 (thru 9, 140, and 10) and 68 (thru 14, 144, 142, 140 and 10). With no switches operated, or with either switch 136 or 138 operated, probability for lighting 32 is 7 to 13. If either switch 144 or 142 is operated, lead 68 will be directed to lamp 25, No Gain, and probability for lighting 32 becomes 6 to 13. If switch 140 is operated, leads 68 and 69 will be directed to lamp 25, and the probability for lighting 32 becomes 5 to 13. Other possibilities and their probabilities are as follows: Probability for lighting the no lamp 25 is 2 to 13. If

144 or 142 is operated, probability for lighting 25 is 3 to 13. If 140 is operated, probability for lighting 25 is 4 to 13. Probability that lamp 22, Fumble Lose Possession, will light is 1 to 13. Probability for lighting 29, 5 yd. Loss, is 1 to 13. Probability for lighting 33, 5 yd. Penalty Blue, and for lighting 34, 5 yd. Penalty Red, is 1 to 13 for each.

With offensive play block 151 in 125, seven leads from the spinner are directed to lamp 18, 7.5 yd. Run to the Left. They are 71, 73, 74, 76, 77, 68 (thru 15, 144, 140, 142 and 13) and 70 (thru 12, 142, and 13) Probability for lighting lamp 18 if no switches are operated, or if either one of switches 136 or 138 is operated, is 7 to 13. If 144 or 140 is operated, probability for lighting 18 is 6 to 13. If 142 is operated, probability for lighting 18 is 5 to 13. Other possibilities and their probabilities are as follows: Probability for lighting lamp 25, No Gain, with no switches operated, or with either 136 or 138 operated, is 2 to 13. With 140 or 144 operated, the probability is 3 to 13. With 142 operated it becomes 4 to 13. Probability for lighting lamp 22, Fumble Lose Possession, is 1 to 13; for lighting 29, 5 yd. Loss, is 1 to 13; for lighting 33, 5 yd. Penalty Blue, and for lighting 34, 5 yd. Penalty Red, is 1 to 13 each.

With play block 153 in 125, the situation is as shown in FIG. 8. All 11 contacts at one side of box 125 are closed on the 11 leads from the spinner. At the opposite side of box 125 only contact terminals 11, 16, 25, 27, 28 and 29 are closed on the corresponding numbered contacts from among the 32 contact terminals on that side of box 125. Seven of the leads from the spinner are directed to lamp 27, 2.5 yd. Run. They are 71, 72, 73, 75, 76, 77 and 68 (thru 16, 144, 142, 140, and 11). Probability for lighting 27 when no switches are operated, or when either 136 or 138 are operated, is 7 to 13. If 140, or 142 or 144, is operated, the probability becomes 6 to 13. Other possibilities and their probabilities are as follows. When no switches are operated, or when 136 or 138 are operated, probability for lighting 25 is 2 to 13. when 140, or 142 or 144 is operated, the probability for 25 is 3 to 13, probability for lighting 28, Fumble Retain Possession; or for lighting 29, 5 yd. Loss; or for lighting 33, 5 yd. Penalty Blue; or for lighting 34, 5 yd. Penalty Red, is 1 to 13 each.

With block 155 in 125, three of the 13 leads from the spinner are directed to lamp 26, Touchdown. The probability for lighting lamp 26 is 3 to 13. The probability for lighting lamp 25, No Gain, is 7 to 13, and the probability for lighting lamp 29, 5 yd. Loss, or lamp 33, 5 yd. Penalty Blue, and lamp 34, 5 yd. Penalty Red, is 1 to 13 each.

With block 157 in 125, the eight leads, 69, 70, 71, 72, 73, 74, 75 and 76 are directed to lamp 19, 30 yd. Kick, and the probability is 8 to 13. One lead, 78, is directed to lamp 30, 40 yd. Kick, and the probability is 1 to 13. One lead 77 is directed to lamp 20, 10 yd. Kick, and the probability is 1 to 13. One lead 68, is directed to lamp 29, 5 yd. Loss, and the probability is 1 to 13. The probability for lighting 33, 5 yd. Penalty Blue and for lighting 34, 5 yd. Penalty Red, is 1 to 13 each. With block 159 in 125, seven leads from the spinner are directed to lamp 24, 20 yd. Place Kick. They are 68, 69, 70, 72, 73, 74, 76, and the probability is 7 to 13. Two leads, 71 and 75, are directed to lamp 23, 15 yd. Place Kick, and the probability is 2 to 13. One lead, 77 is directed to lamp 25, No Gain, and the probability is 1 to 13. One lead, 78, is directed to lamp 29, 5 yd. Loss, and the probability is 1 to 13. The probability for lighting lamp 33, 5 yd. Penalty Blue, or lamp 34, 5 yd. Penalty Red, is 1 to 13 each.

Any of the aforementioned probabilities may be changed by making selective changes in the wiring within the affected play block. Offensive plays other than those described may be included in the game by introducing other play blocks, increasing if necessary the number of electrical contacts on the blocks and correspondingly on the junction-boxes.

In the particular game illustrated herein, when the Red team is on the offensive, the following numbered lamps indicate the outcome of his offensive plays. The lamp numbers for the corresponding Blue team offensive plays are shown in parentheses. Refer to FIGS. 1, 5, 6 and 8.

Lamp Number:	Occurrence
25 (25)-----	No gain.
35 (34)-----	Penalty red.
36 (33)-----	Penalty blue.
37 (32)-----	7.5 yd. run Right
38 (31)-----	15 yd. pass Right.
39 (30)-----	40 yd. punt.
40 (29)-----	5 yd. loss.
41 (28)-----	Fumble retain possession.
42 (27)-----	2.5 yd. run.
43 (26)-----	Touchdown.
44 (24)-----	20 yd. placekick.
45 (23)-----	15 yd. placekick.
46 (22)-----	Fumble lose possession.
47 (21)-----	Pass interception.
48 (20)-----	10 yd. punt.
49 (19)-----	30 yd. punt.
50 (18)-----	7.5 yd. run Left.
51 (17)-----	15 yd. pass Left.

The game is placed by two players, each sitting near one of the consoles, 123 and 124. The players determine by toss of a coin, as in a real football game, or by any other means, the initial offensive and defensive teams. In FIG. 1, the player with console 123 has the Blue team which moves offensively to the right. His opponent, with console 124 has the Red team which moves offensively to the left.

In playing the game, the punt block 157 is used for kickoff. Assuming Blue won the toss and elected to kick, he places block 157 in box 125 and moves the frame 99 so that the line of scrimmage between the teams 105 is on Red's 40yd. line. As shown by the wiring diagram for block 157 in FIG. 7, and by the wiring diagram in FIG. 8, Red has no defensive move to make against a kick, so play is ready to start. The offensive player, in this case Blue, lifts the spinner shaft 233, pushes plate 131 so that 233 rests on plate 131, operates switch 90 to the "ON" position, spins the spinner, and, when its motion stops, pulls plate 131 toward him, allowing 233 to drop, thereby placing contactor 133a in one of the 13 slots of the member 94 of the spinner. A lamp will now become illuminated and a light will show somewhere on the board. The possibilities of lamps becoming lights are as follows: Lamp 33, 5 yd. Penalty Blue, or lamp 34, 5 yd. Penalty Red. Penalties in this game must be assessed. Lamp 29, 5 yd. Loss, blue light appears 5 yds. behind line of scrimmage. For the kickoff, lighting of lamp 29 indicates a kick out-of-bounds, which must be kicked off again from the 35-yd. line. For any other play from scrimmage, the 5 yd. Loss light shows the position of the ball after that play. Light from lamp 30, 40-yd. Kick, or from lamp 19, 30-yd. Kick, or from lamp 20, 10-yd. Kick, indicates the position of the ball at the end of the play, i.e., after the kick and punt return. Lamps 30, 19, and 20 are red bulbs on the blue side of the scrimmage line and indicate change of possession of the ball. The line of scrimmage is moved to that point after its position is marked by a linesman's stick on each side.

The Blue team is now on defensive, so he switches off his battery to prevent inadvertent lighting on the field, and removes block 157 from box 125. The Red player now offensive, lifts the spinner shaft 234, slides plate 132 under it, moves switch 91 to "ON," and selects a play from his group of play blocks 146, 148, 150, 152, 154, 156, 158, 160. The name of the play is written on the bottom of the block between the two rows of electrical contacts. The Red player places the selected play block in 126 without exposing the name to the Blue player. Blue now decides on his defensive move and operates either 135, 137, 139, 141 or 143. Depending upon his accuracy in diagnosing Red's strategy, Blue's defensive move will lessen Red's probability of success by either zero, or 1 to 13 or 2 to 13, for those plays affected by the defense switches. This was described above.

Note that all play attempts by the offensive have one or more of the following defenses built-in against them: 5 yd. penalty; 5 yd. loss; no gain; pass intercept; fumble. The defense switches are not shielded from view as they are

operated after the offensive play is fixed. Moreover, the offense should be able to see that only one defensive switch is operated at a time.

The offense and defense being ready, Red spins his spinner, and then, after it stops, lowers it by pulling plate 132 toward him, thereby lighting one of the light bulbs. After kickoff, and during the play, the only penalties are indicated by lamps 33, 34, 35 and 36 recessed in side posts 119 and 120. All other lighted bulbs (only one is lighted at a time) indicate the location or position of the ball at termination of the individual play. If the light is of defensive color, it indicates that possession of the ball has changed. This was illustrated in the description above where Blue kicked off (punted) and the light for termination of the play, (the lamp 30, 19 or 20 corresponding to the 40-, 30-, or 10yd. Kick) was red. When the 15-yd. Pass to Right, or the 15yd. Pass to the Left, is played, the defensive colored bulb 21 or 47 may light indicating change of possession by pass intercept. When the 7.5 yd. Run to the Right, or the 7.5 yd. Run to the Left, is played, the defensive colored bulb 22 or 46, 2.5 yd. behind the line of scrimmage, may light indicating a fumble recovery by defense.

The game proceeds according to the rules of football which may, of course, be amended or changed on the spot by agreement between the players. For instance, a quarter period may be determined by, say, 25 plays instead of a time limit. The goal posts may be moved up to the goal line, making the placekick a more important play.

The game includes most of the possibilities of football. The outcome of any play cannot be predetermined. For each play, there are certain possible occurrences, each occurrence having a reasonable probability of happening. Defense's judgment in diagnosing offense's intent can alter the probabilities in his favor for some plays. Occurrences for other plays are determined by the "breaks of the game," all governed by reasonable probabilities.

In the specific form of football game illustrated and described, I have, for ease of illustration, shown the offensive plays established by means of play blocks (145-160) which are selected by the offensive player and inserted into the recess of a junction box (125 or 126). It should be understood that such play blocks are but one of several different forms of offensive-play-selection means that could be used. For example, a rotor (commutator) type of switch could be used, thereby eliminating the blocks and simplifying the product.

It should also be understood that while I have specifically shown and described a football game, the techniques disclosed herein could also be applied to other games, including soccer, hockey, baseball and basketball.

While the preferred embodiment of this invention has been described in some detail, it will be obvious to one skilled in the art that various modifications may be made without departing from the invention as hereinafter claimed.

I claim:

1. In an electric football game apparatus:

- a. a simulated playing-field board;
- b. an array of light-passing passages at spaced-apart locations in said board;
- c. a frame mounted below said board and slidable in the lengthwise directions relative to said playing field;
- d. a plurality of light bulbs mounted at selected locations on said frame and adapted when lighted to emit light upwardly through one of said light-passing passages in said playing-field board;
- e. an electric power supply;
- f. a rotary switch having a plurality of pairs of contacts;
- g. conductor means connecting one contact of each pair of switch contacts to one side of said power supply;
- h. a junction box having a recess and a row of electrical contact terminals on each side of said recess;
- i. conductor means connecting other contacts of said pairs of rotary-switch contacts to a different one of the contact terminals on the one side of said junction-box recess;

j. conductor means connecting some of the terminals on the other side of the junction-box recess to the other terminal of said power supply through different ones of said light bulbs;

k. defensive-play means normally connecting some of the remaining terminals on said other side of the junction-box recess to other of the remaining terminals on the same other side;

l. said defensive-play switch means being operable to connect one or more of said some of said remaining terminals to said other terminal of said power supply through one of said light bulbs;

m. offensive-play cross-connection block means selectable from a set of cross-connection blocks having different cross-connections and insertable one at a time into said junction-box recess to connect each of said terminals on said one side of said recess to selected terminals on the other side; and

n. and means for spinning said rotary switch to select by chance one of said pairs of switch contacts, thereby to complete a circuit through said rotary switch and said cross-connection block means, thereby to illuminate one of the light bulbs.

2. Apparatus according to claim 1 characterized in that, in addition to said light bulbs carried on said slidable frame, two light bulbs are fixedly mounted under said playing-field board, one at each end of the playing field and corresponding to touchdowns.

3. Apparatus according to claim 2 characterized in that each of said defensive-play switches is identified as a defense to a different offensive play, and in that when a defensive switch is operated away from its normal condition the probability is increased of completing a circuit to illuminate the light bulb whose position on the slidable frame corresponds to a ball position on the playing field corresponding to no gain.

4. Apparatus according to claim 3 characterized in that conductor means are provided for connecting at least one of said other contacts of said pairs of rotary-switch contacts directly to said other terminal of said power supply through one of said light bulbs, said light bulb when illuminated indicating a penalty, said light bulb being mounted above the playing field on a side pedestal of said slidable frame.

5. Apparatus according to claim 1 characterized in that each of said offensive-play cross-connection blocks is identified with a different offensive play, and in that the particular cross connections effected by each block when inserted into said recess increases the probability of completing a circuit to illuminate the particular light bulb whose position on the slidable frame corresponds to the ball position in the playing field hoped to be attained by that particular offensive play.

6. Apparatus according to claim 1 characterized in that:

a. each of said pairs of rotary switch contacts is formed by contacts located on opposite sides of a slot and in that said slots are spaced equidistant from the center axis of rotation of said rotary switch; and

b. said means for spinning said rotary switch comprises a rotatable center shaft, a radial arm secured on said shaft for rotation therewith, a downwardly-projecting contacts-closing element secured to said arm for making connection between the contacts located on opposite sides of said slot, and means for elevating said center shaft to raise said contacts-closing element above the contacts and for supporting said shaft and said radial arm in elevated position during spinning thereof for spinning said contacts-closing element clear of said contacts and for dropping said shaft and radial arm at the termination of said spinning to drop said contacts-closing element into one of said slots.

7. In an electrical football game apparatus:

- a. a simulated playing-field board;
- b. an array of vertical passages through said playing-field board at spaced apart locations;

- c. support means mounted below said playing-field board and movable relative to said board in the lengthwise direction of the field;
 - d. a plurality of light bulbs at selected locations on said support means adapted when lighted to emit light upwardly through one of said passages in said playing-field board;
 - e. electric power supply;
 - f. a rotary switch having a rotatable switch arm and a plurality of pairs of switch contacts arranged equidistant from the axis of rotation of the said switch arm;
 - g. conductive means connecting one contact of the pairs of rotary-switch contacts to one side of said power supply;
 - h. a junction-box having two sets of electrical contacts spaced from each other;
 - i. conductor means connecting other contacts of the pairs of rotary-switch contacts to a different contact of one of the sets of junction-box contacts;
 - j. means connecting contacts of the other set of said junction-box contacts to the other terminal of said power supply through different ones of said light bulbs
 - k. a selection of offensive-play cross-connection means adapted for use with said junction-box, each of said cross-connection means being different from each of the others, only one of said selection of cross-connection means being usable at a time, for connecting certain of said contacts of the one set of said junction-box contacts with certain of the contacts of the other set; and
 - l. means for rotating said rotary switch to select by chance and thereby to connect the power supply to one only of the contacts of said one set of junction-box contacts, thereby to close a circuit through and to illuminate one and only one of said light bulbs.
8. In an electrical football game apparatus according to claim 7 further characterized in that said means for connecting contacts of said other set of said junction-box contacts to said power supply through different ones of said light bulbs includes a plurality of defensive-play switch means for switching connections from contacts of said other set of junction-box contacts from one of said light bulbs to a different one of said light bulbs.
9. In an electrical football game apparatus:
- a. a simulated playing-field board;
 - b. support means mounted below said playing-field board and movable relative to said board in the lengthwise direction of the field and carrying a transverse indication corresponding to the scrimmage line;
 - c. a plurality of light bulbs at selected locations on said support means on both sides of said scrimmage line;
 - d. electric power supply;
 - e. a junction-box having two sets of electrical contacts spaced from each other;
 - f. a rotary switch having a rotatable switch arm and a plurality of pairs of switch contacts arranged equidistant from the axis of rotation of the said switch arm;
 - g. conductive means connecting one contact of the pairs of rotary-switch contacts to one side of said power supply;
 - h. conductor means connecting other contacts of the pairs of rotary-switch contacts to a different contact of one of the sets of junction-box contact;
 - i. means connecting contacts of the other set of said junction-box contacts to the other terminal of said power supply through different ones of said light bulbs;
 - j. a selection of offensive-play cross-connection means

- adapted for use with said junction-box each of said cross-connection means being different from each of the others, only one of said selection of cross-connection means being usable at a time, for connecting certain of said contacts of the one set of said junction-box contacts with certain of the contacts of the other set; and
 - k. means for rotating said rotary switch to select by chance and thereby to connect the power supply to one only of the contacts of said one set of junction-box contacts and to close a circuit to illuminate one and only one of said light bulbs.
10. In an electric football game:
- a. a simulated playing-field board;
 - b. a movable scrimmage-line tray mounted adjacent said board and movable relative to said board in the lengthwise direction of the field, and including a scrimmage line;
 - c. light bulbs of at least two different colors on said tray at selected positions on both sides of said scrimmage line, the illumination of a light bulb denoting the position of the ball, the color of the bulb denoting the team having possession of the ball;
 - d. a power supply;
 - e. a multicircuit normally-open rotary switch and a multicircuit normally-open junction-box connected in series with said light bulbs across said power supply;
 - f. cross-connection means selectable from a set of different cross-connection means, each corresponding to a different offensive play, for insertion into said junction-box to close a circuit from one side of said rotary switch to one side of said power supply through said light bulbs; and
 - g. said normally-open rotary switch being adapted to be rotated to close one of the circuits between the other side of said battery and said junction-box, thereby to light one only of said light bulbs.
11. Apparatus according to claim 10 characterized in that defensive-play switch means are interposed between said junction-box and said light bulbs for increasing the probability that the light bulb corresponding to no-gain will be energized.
12. In an electric football game:
- a. a board simulating a playing field;
 - b. a movable scrimmage-line tray mounted under said playing field and movable relative thereto in the lengthwise direction of the field, said tray carrying a plurality of ball-position indicating signal lamps only one of which is energizable at a time;
 - c. a plurality of manually-selectable offensive play-selecting connection members for making connections to desired lamps;
 - d. a plurality of manually-selectable defensive play-selecting connection members connected between said offensive play-selecting connecting members and certain lamps for diverting connections from offensive-selected lamps to defensive-selected lamps,
 - e. a rotary spinable switch having a plurality of contacts connectable to said offensive play-selecting connection members; and
 - f. power means connected to said rotary switch and to said lamps for energizing one only of said lamps for each play according to the chance selection made by the spinable rotary switch as modified by the manually selected offensive and defensive play-selecting connection members.