May 26, 1925. 1,539,366

R. R. O'BRIEN

GAME REPRODUCING MECHANISM

Filed Nov. 24, 1923 3 Sheets-Sheet 1

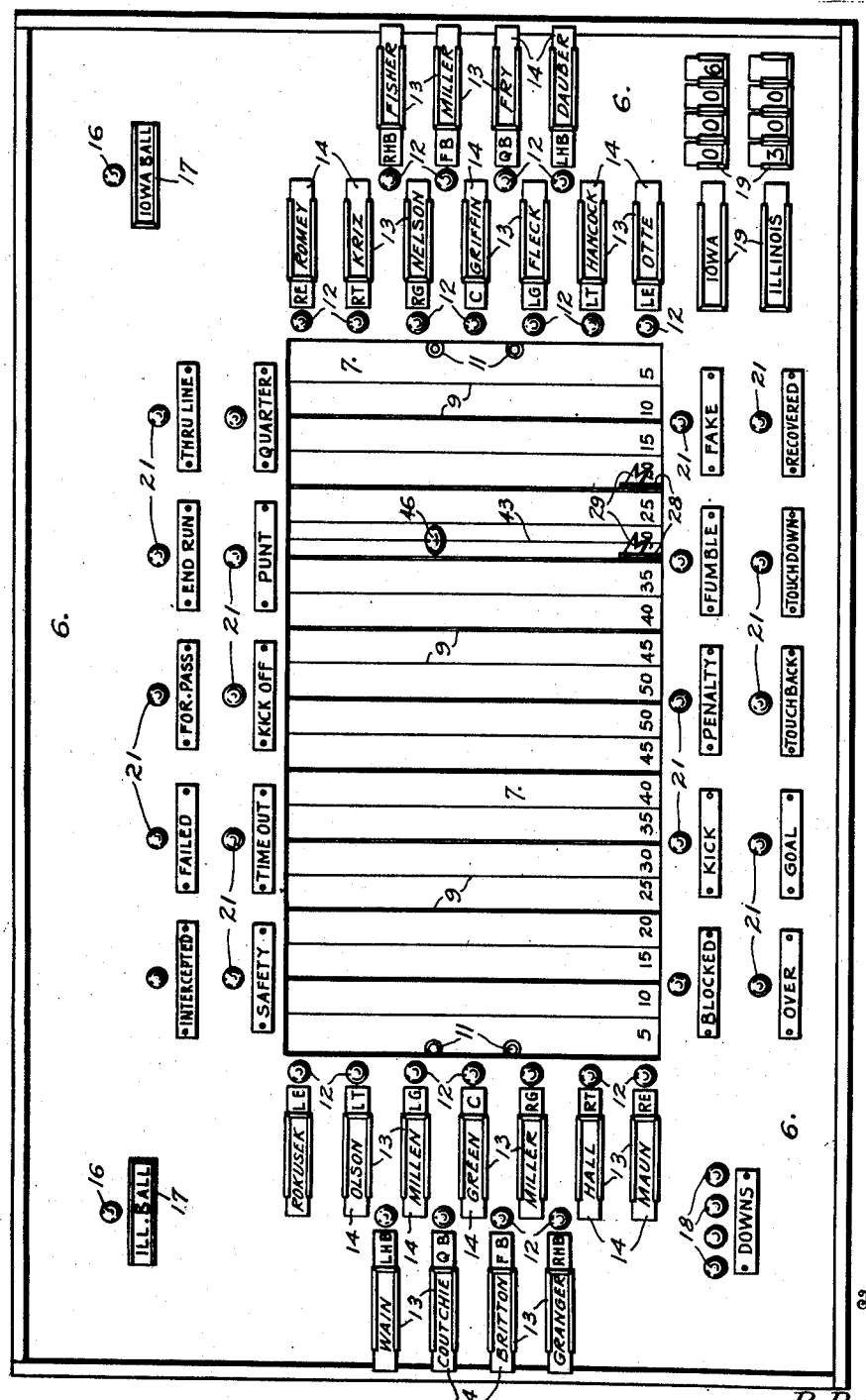


Fig. 1.

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GAME REPRODUCING MECHANISM

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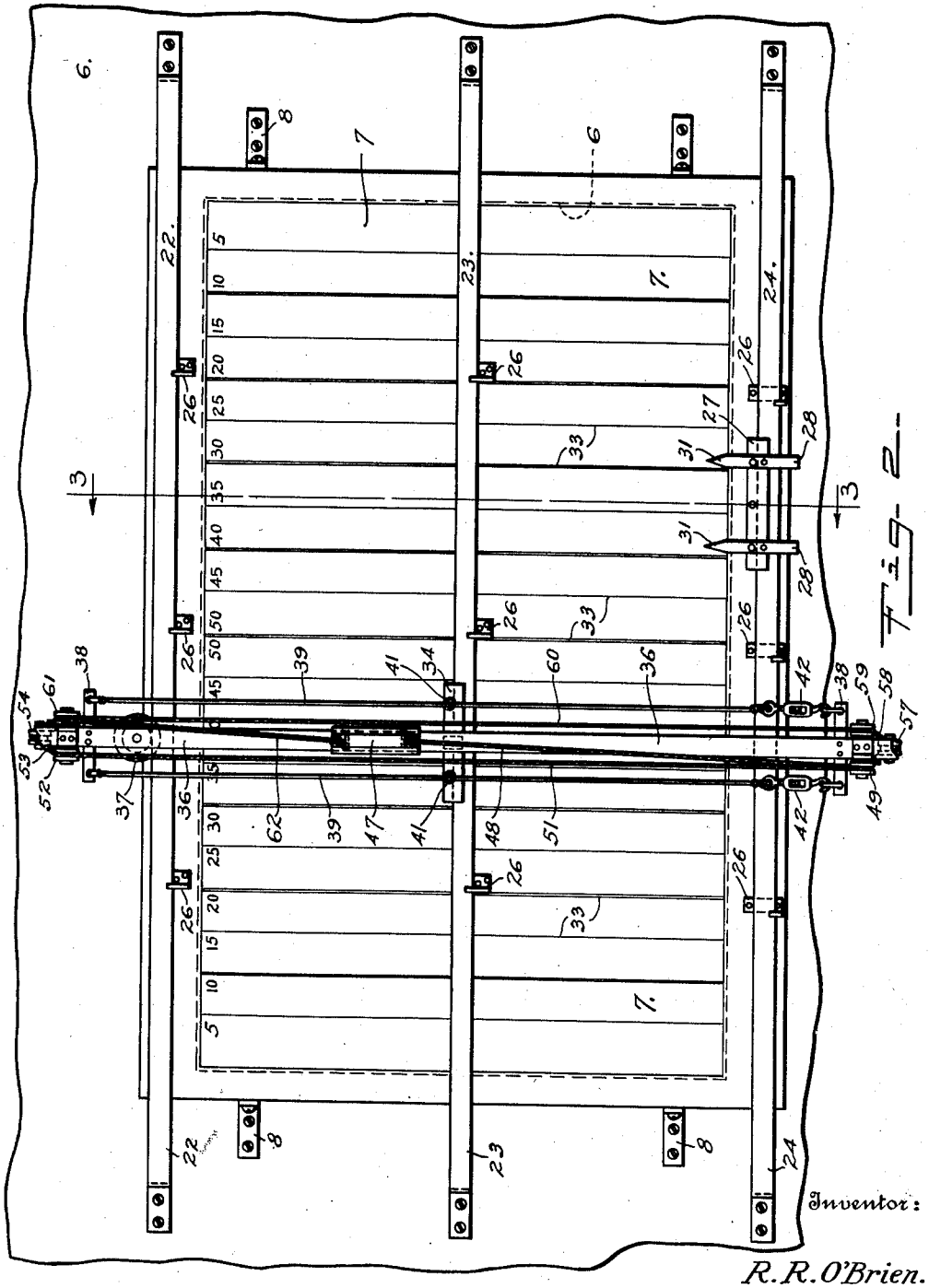


Fig. 2.

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GAME REPRODUCING MECHANISM

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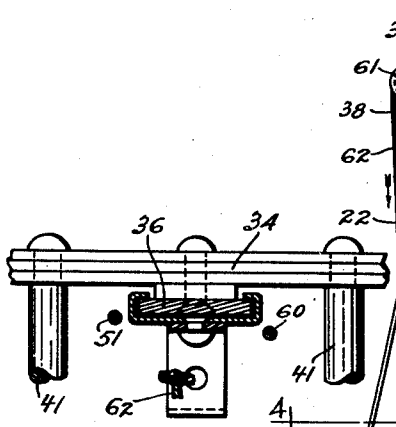


Fig- 4-

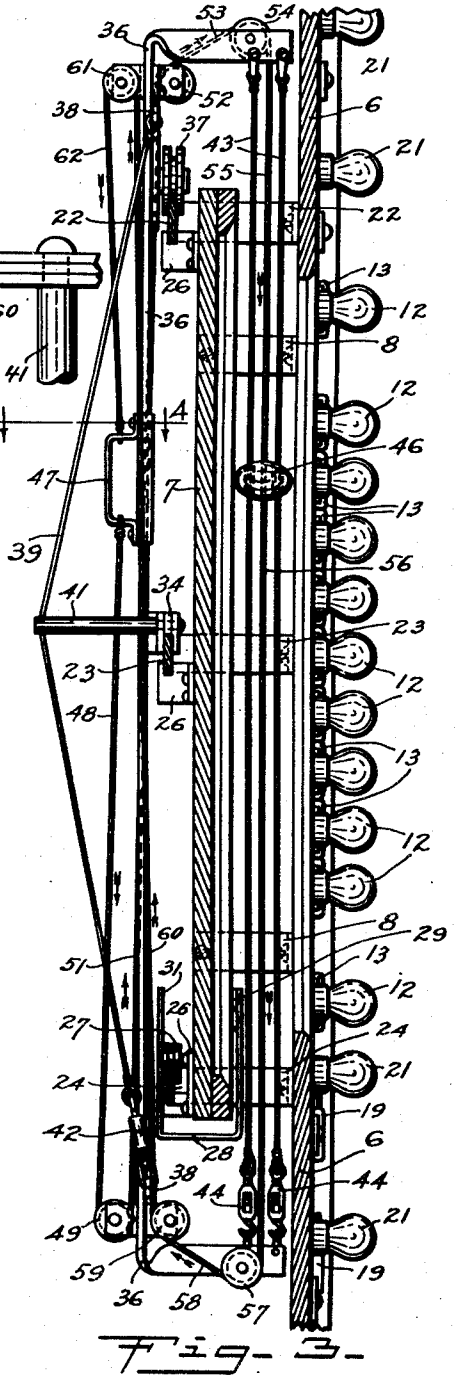


Fig- 3-

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UNITED STATES PATENT OFFICE.

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GAME-REPRODUCING MECHANISM.

Application filed November 24, 1923. Serial No. 676,829.

To all whom it may concern:

Be it known that I, ROBERT R. O'BRIEN, a citizen of the United States, residing at Council Bluffs, in the county of Pottawattamie and State of Iowa, have invented certain new and useful Improvements in Game-Reproducing Mechanism, of which the following is a specification.

My invention relates to mechanism for reproducing or representing to a group of spectators the various plays and incidents which occur during the progress of games or competitive field sports such as foot-ball, soccer, polo and the like. It is the object of my invention to provide in a mechanism of this character means for indicating to the spectators all of the movements upon the field of play of a ball or the like, at the same time indicating the player or players who take part in the particular incident of the game which is being presented, and indicating also the general nature of the play or incident. My invention is particularly adapted for the representation of field games involving the use of a ball, and where the incidents of the game are reported by telephone or telegraph to the operators of the reproducing mechanism, located at any distance from the scene of actual play. In the accompanying drawings I have shown an embodiment of my invention especially adapted for the representation of foot-ball games, and it will be obvious therefrom that the same means may be employed for representing the incidents of any analogous competitive game involving movement of a ball or the like upon a field of play.

In the drawings Fig. 1 is a front view of the game reproducing mechanism, or the portion thereof which is viewed by spectators, Fig. 2 is a rear view of the mechanism, showing the parts which are manipulated by the operators, Fig. 3 is a transverse vertical section on the line 3—3 of Fig. 2, and Fig. 4 is a detail horizontal section on the line 4—4 of Fig. 3.

In carrying out my invention I provide a flat frame or board 6 having in the central portion thereof an opening shaped and proportioned similarly to the field of play of the game to be represented, which in the example illustrated is rectangular, with its longer sides horizontal. The field-board 7 is arranged behind the central opening of the frame, so as to be seen through said opening from the front, being slightly spaced rearwardly from the frame, its edges overlapping the inner edges of the frame, and being supported by pairs of angle-brackets 8 connecting the same with the frame at each end. On the front of the field-board are vertical lines 9 representing the yard-lines of the grid or foot-ball field, and adjacent to said lines are marked the numbers 5, 10—50, for indicating the distance of the respective lines from the goals or ends of the field. At the ends of the field are marked the positions of the goal-posts 11.

On the frame 6 adjacent to the ends of the field-opening are arranged a series of indicating devices, such as electric lamps 12, which may be controlled by suitable switches (not shown) located at any position convenient for the operators of the mechanism. Near the lamps 12 are holders 13 for cards or slips 14 on which are marked the names of the players of the opposing teams. The positions of the players are indicated by permanent marking, "C" for center, "RG" for right guard, "LT" for left tackle, "RHB" for right half back, etc., the players of the opposing teams being shown at opposite ends of the frame. Above the player-indicators are lamps 16 or similar indicating means for showing which team has possession of the ball, and adjacent to said lamps are holders 17 for cards marked with the names of the teams. On the lower portion of the frame near one end are lamps 18 or similar indicating means for showing the number of "downs." At the opposite end are holders 19 for cards marked with the names of the opposing teams, and other cards on which are marked the scores made by the respective teams during each quarter of the game. On the frame above and below the field-opening are lamps 21 adjacent to which are cards or other markings for showing the general nature of the play or other incident of the game, such as "forward pass," "end run," "punt," "fumble," "touchdown," etc., which in each instance may be conveniently indicated by the lighting of the respective lamp, under control of the switch therefor located near the operator of the mechanism.

On the rear side of the frame 6, and straddling respectively the upper, intermediate and lower portions of the field-board, are three guide-bars 22, 23 and 24, of which the intermediate portions extend horizontally

near the rear side of the field-board, and the end portions are turned forwardly and secured to the frame. The intermediate portions of the guide-bars are also connected with the field-board by small angle-brackets 26 extending back from said board beneath the lower edges of the bars. On the upper edge of the lower guide-bar 24 is disposed a slide 27 to which are secured a pair of U-shaped members 28 which extend around beneath the lower edge of the field-board and up in front thereof. At their front ends said members 28 carry flags 29 which are visible through the field-opening of the frame 6 and serve to indicate the position of the linesmen's stakes. At their rear ends said members 28 terminate in pointers 31, and upon the rear surface of the field-board are marked yard-lines 33 corresponding with the yard-lines 9 on the front of the board, so that the operator of the mechanism may readily set the pointers 31 at the positions required for appropriately displaying the flags 29. Said flags or distance-markers are, of course, so spaced from each other as to represent between them the distance of ten yards upon the field of play.

On the upper edge of the intermediate guide-bar 23 is mounted a slide 34 to which is secured a vertical bar 36 of which the upper and lower ends extend above and below the respective edges of the field-board and are turned forwardly to extend slightly beyond the front side thereof, said ends terminating near but not touching the rear side of the frame 6. On the upper portion of the bar 36 is a roller 37 which rests upon the upper edge of the guide-bar 22. Near the upper and lower ends of the vertical portion of the bar 36 are short transverse bars 38, to which are connected the ends of the tension-braces 39, the central portions of said braces engaging the ends of strut-posts 41 which extend rearwardly from the slide 34, and the lower portions of the braces having turn-buckles 42 therein by which they may be tightened. To the horizontal forwardly projecting ends of the bar 36 are connected the ends of a pair of wires 43 which extend vertically across the front or face of the field-board, turn-buckles 44 being provided at the lower portions of said wires for maintaining the tension thereof. The tension of said wires 43 tends to bend forwardly the upper and lower vertical portions of the bar 36, and it is the purpose of the tension-braces 39 to prevent such bending of the bar without making the same of such size and weight as to resist the stress thereon without the trussing arrangement afforded by said braces.

Upon the guide-wires 43, at the front of the field-board 7, there is slidably mounted a ball 46, the same preferably being an elliptical or prolate spheroid, to better represent the shape of a foot-ball. The position of the ball upon the guides 43 is controlled by means of a sliding handle 47 which is mounted upon the vertical bar 36 behind the field-board, said handle being connected with the ball by a cord or flexible member arranged as follows: One end of the cord is secured to the lower portion of the handle, and therefrom a portion 48 extends downwardly to a small pulley 49 mounted at one side of the bar near the lower end thereof. From the pulley 49 a cord-portion 51 extends upwardly to a pulley 52 mounted on the bar near the upper end thereof, thence a cord-portion 53 extends forwardly to a pulley 54 mounted on the upper forwardly extending portion of the bar, and thence a cord-portion 55 extends downwardly to the ball 46. From the ball a cord-portion 56 extends down to a pulley 57 mounted on the lower horizontal portion of the slide-bar 36, thence a cord-portion 58 extends rearwardly to a pulley 59, thence a cord-portion 60 extends upwardly to a pulley 61, from which the remaining cord-portion 62 extends down and is secured to the upper portion of the handle 47, the pulleys 59 and 61 being mounted on the slide-bar at the sides thereof opposite the pulleys 49 and 52, respectively.

It will be seen that by the described arrangement of the flexible connecting element between the handle 47 and the ball 46, any movement of the handle vertically upon the bar 36 will result in a similar movement of the ball upon the guides 43, the ball moving upwardly or downwardly the same as the handle, and the parts being so proportioned that the ball will be directly opposite the handle at all times. Thus the motions of the ball laterally of the field of play may be represented by vertical movements of the handle 47, and the motions of the ball longitudinally of the field may be represented by moving the handle horizontally, which will result in a shifting, longitudinally of the guide-bars 22 and 23, of the entire ball-supporting and controlling mechanism consisting of the bar 36 and the parts carried thereon. Diagonal movements of the ball upon the field may be represented by simultaneously moving the handle laterally and longitudinally of the field board. The guide-wires 43, and the control-cord portions 55 and 56, may be of a size and coloration such as to be substantially invisible to the spectator in front of the mechanism, while the ball may be of a suitable size and of such contrasting color as to be plainly visible.

The operation of the mechanism as a whole will be clearly apparent. The operator, standing behind the field-board, has before him a replica of the field of play, the control-handle 47 representing to him the position of the ball, and being capable of movement in any direction from and to any

portion of the field. The operator may thus graphically represent all incidents of the game which affect the location or movements of the ball upon the field, and at the same time, by suitable manipulation of the control-switches for lighting and extinguishing the indicating-lamps 12, 16, 18 and 21, other details of the game may be shown to the spectators in accordance with the description of the game received by the operator from the actual field of play. At each "first down" the operator moves the slide 27 to a position such that one of the flags 29 is on the same yard-line as the ball and the other flag at the appropriate advanced position.

Now, having described my invention, what I claim and desire to secure by Letters Patent is:

1. In a mechanism of the class described, the combination with a field-board, and a frame spaced therefrom and having an opening through which the front of the field-board is in view, of guides extending longitudinally across the rear side of the field-board, a support-member mounted to move longitudinally of said guides, and slidable from one end of the field-board to the other, said support-member extending transversely of the guides and having end portions extending forwardly about opposite edges of the field-board, a control-handle mounted slidably upon said support-member, a flexible element extending from said handle to the end portions of said support-member and across the front of the field-board, and a ball connected with the front portion of said flexible element, and slidable across the field-board from one side to the other thereof, the control-handle being movable longitudinally of the support member to actuate the ball transversely of the field-board, and the support-member being movable upon said guides to actuate the ball longitudinally of the field-board.

2. In a game reproducing mechanism, a field-board, a support member mounted at the rear of said field-board and slidable longitudinally from end to end thereof, said support member having upper and lower portions extending about the upper and lower edges of the field-board, a control-handle mounted upon said support member and slidable vertically thereon, a flexible element having its ends connected with said control-handle and extending therefrom about the upper and lower edges and across the front of the field-board, and a ball connected with the front portion of said flexible element and movable therewith in all directions across the front of the field-board and from and to all positions thereon in accordance with movements of the control-handle.

3. In a game reproducing mechanism, a field-board, horizontal guide-bars extending across the rear side of said field-board, a ball-supporting and controlling mechanism mounted upon said guide-bars and slidable bodily longitudinally thereof from end to end of the field-board, said mechanism having portions extending about the upper and lower edges and across the front of the field-board, a ball carried upon said front portions, and means carried upon the rear portion of said supporting and controlling mechanism and connected with said ball for moving the same vertically across the front of the field-board from one side to the other thereof, whereby through the combination of said vertical movements and of the horizontal movements of the supporting mechanism as a whole the ball may be moved in any direction across the front of the field-board from and to any points thereon.

4. In a field-game reproducing mechanism, a board shaped and proportioned to represent the field of play and marked on both its front and rear sides with indicia of the conventional divisions of said field, a ball positioned at the front of said board, means extending across the front of the board for supporting and actuating said ball to move the same vertically from one side to the other of the said field, a control-mechanism mounted at the rear of the board and having members extending about opposite edges of the board and connected with the supporting and actuating means at the front of the board, said control-mechanism being slidable bodily from end to end of the board to effect like movements of the ball, and a member on said control-mechanism for moving the ball, fixed means for guiding the slidably control-mechanism in its sliding movement transversely of the board.

5. In a foot-ball game reproducing mechanism, a board shaped and proportioned to represent the field of play and marked on both its front and rear sides with conventional yard-lines and goals, a control-mechanism mounted at the rear side of said board and slidable longitudinally thereof from end to end, fixed means for guiding the control-mechanism in its sliding movement, a member on said control mechanism slidable transversely of the board, a flexible element connected with said member and extending about opposite edges and across the front of the board, and a ball connected with said flexible element at the front of the board and movable thereby transversely of the board.

6. In a foot ball game reproducing mechanism in combination, a board shaped and marked to represent a conventional foot ball field with its yardage lines and goals, a ball, means for mounting the ball to move the same vertically and for also enabling the ball to move horizontally, a fixed guide slidably receiving the said means and extending

in one of the said directions, a single operating device common to the vertically movable means and the horizontally movable means for guiding the same for carrying the ball to any position on the field, and distance markers positioned adjacent to one edge of the board and movable to indicate the yardage to be gained on downs.

7. In a foot ball game reproducing mechanism, in combination, a board shaped and marked to represent a conventional foot ball field with its yardage lines and goals, a frame spaced from the board and having an opening through which the said field is viewed, a ball, means for supporting the ball and for moving the same to definite positions on the field, a fixed guide extending longitudinally of the field, and marker members partially concealed by the board and projecting at the beginning thereof and slidable along the said guide to indicate positions of linemen stakes and the yardage to be gained on downs.

8. In mechanism of the class described the combination of a field-board, a frame spaced therefrom and having an opening exposing the front of the field-board, a support-member extending across the field-board from one side to the other thereof, fixed means for guiding the support-member for sliding the same from one end of the field-board to the other, a ball located at the front of the field-board, means connected with the board and carried by the support-member for moving the ball vertically from one side of the field to the other and an operating device common to the support-member and the ball actuating means for moving the same simultaneously for causing the ball to travel over the field in any direction.

9. In a foot ball game reproducing mechanism, the combination of a board shaped and marked to represent a conventional foot ball field with its yardage lines and goals, a frame spaced from the board and having an opening through which the said field is viewed, a ball, means for supporting the ball and for moving the same to definite positions on the field, a guide extending longitudinally of the field and located beyond an opening so as to be concealed by the frame, a slide movable along the guide from one end of the field to the other and spaced marker members carried by the slide and projecting at the opening to indicate the yardage to be gained on downs.

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