Nov. 21, 1939. S. PEKALSKI ET AL 2,180,478

GAME APPARATUS

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Fig. 1.

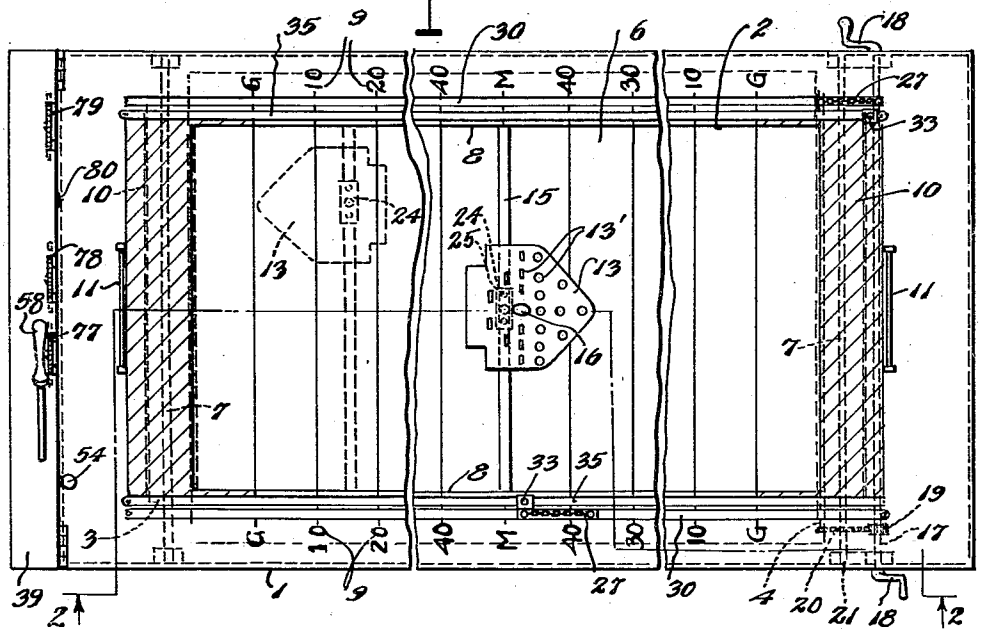


Fig. 2.

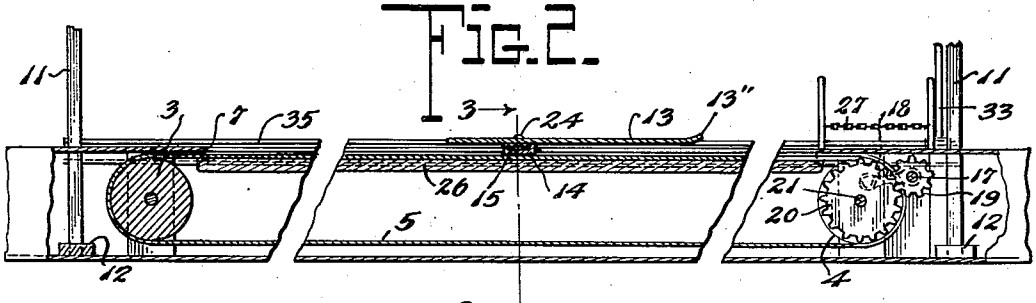


Fig. 3.

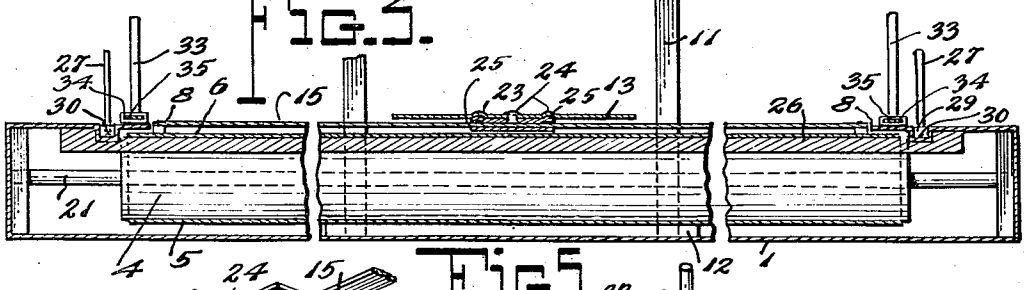


Fig. 4.

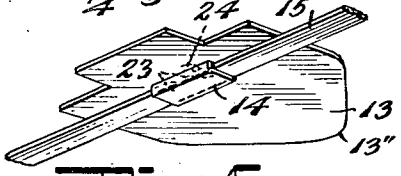
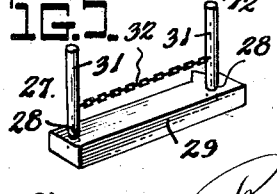


Fig. 5.



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Fig. 6.

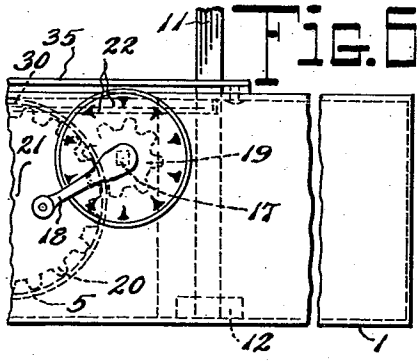


Fig. 7.

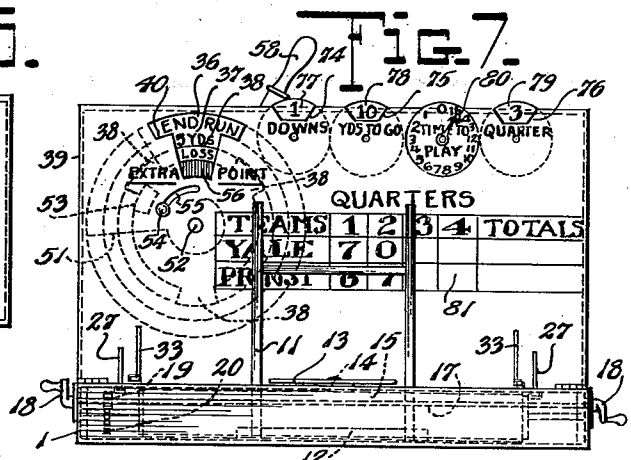


Fig. 8.

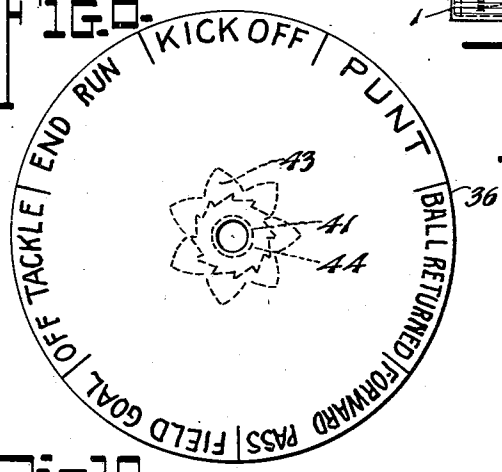


Fig. 9.

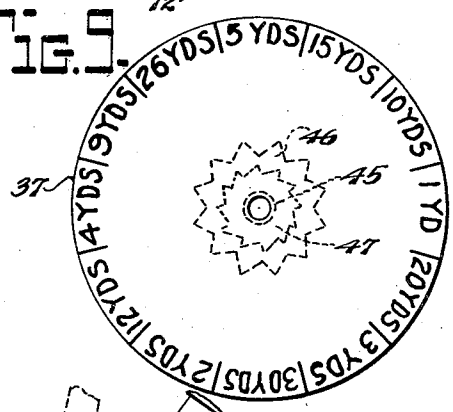


Fig. 10.

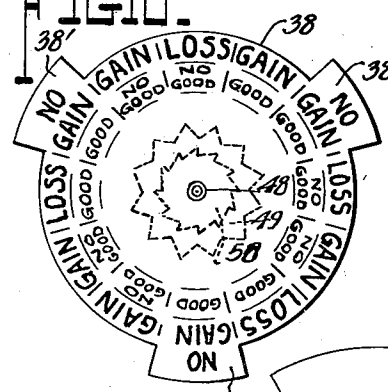


Fig. 11.

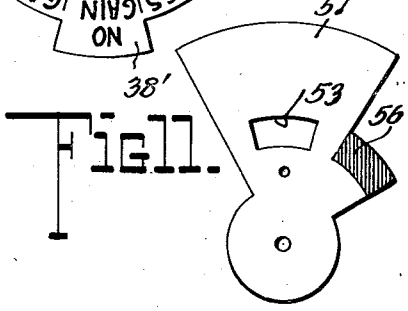
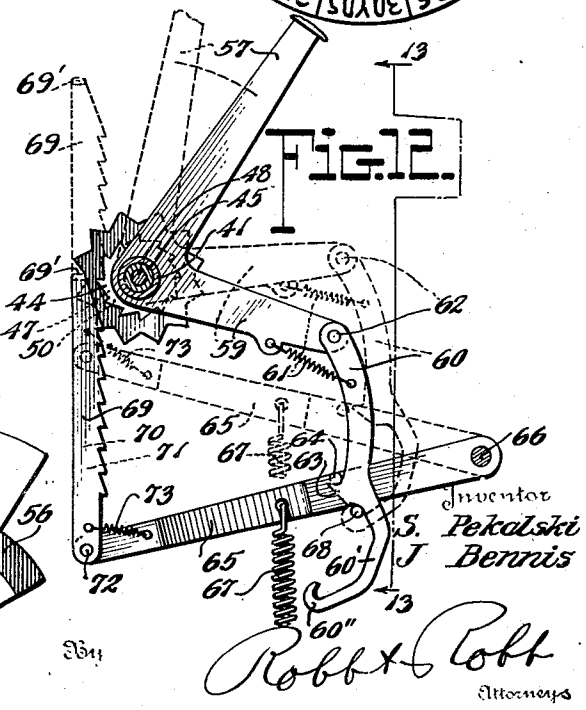


Fig. 12.



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Fig. 13.

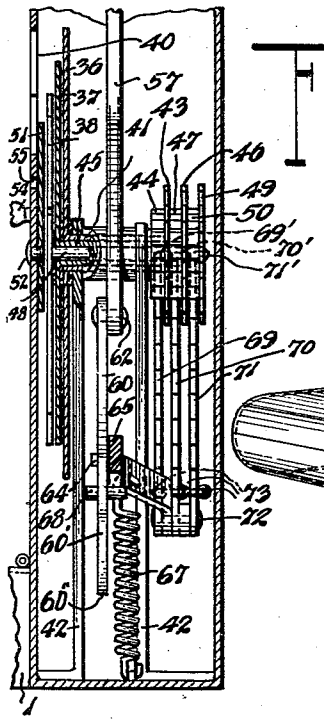


Fig. 14.

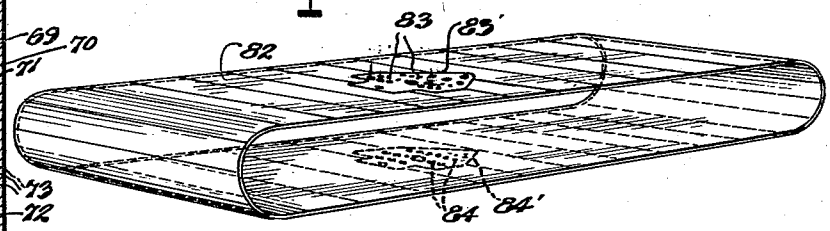
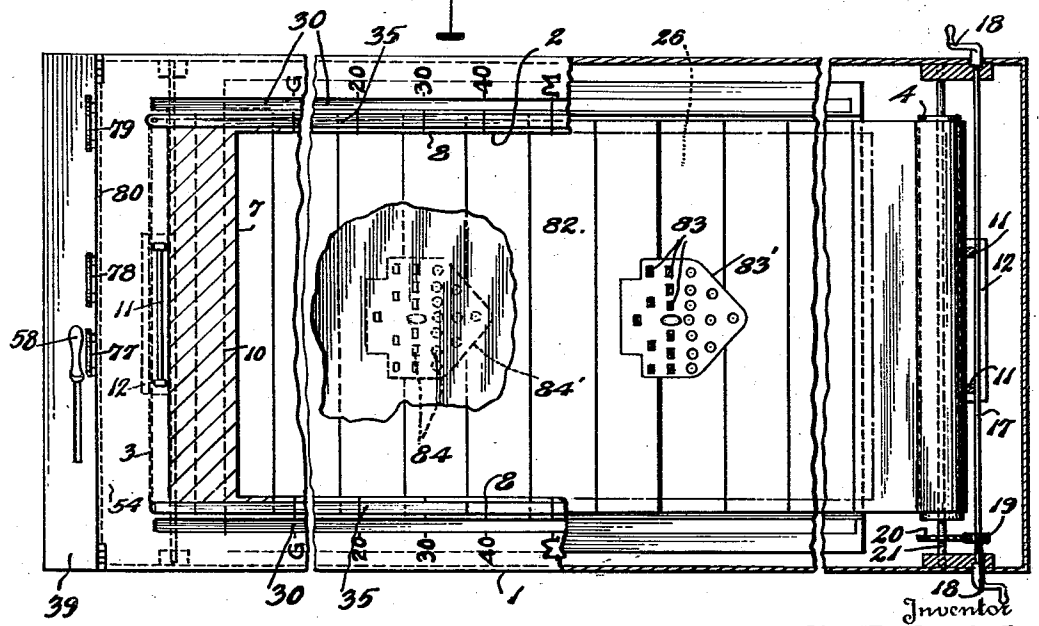


Fig. 15.



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Fig. 17.

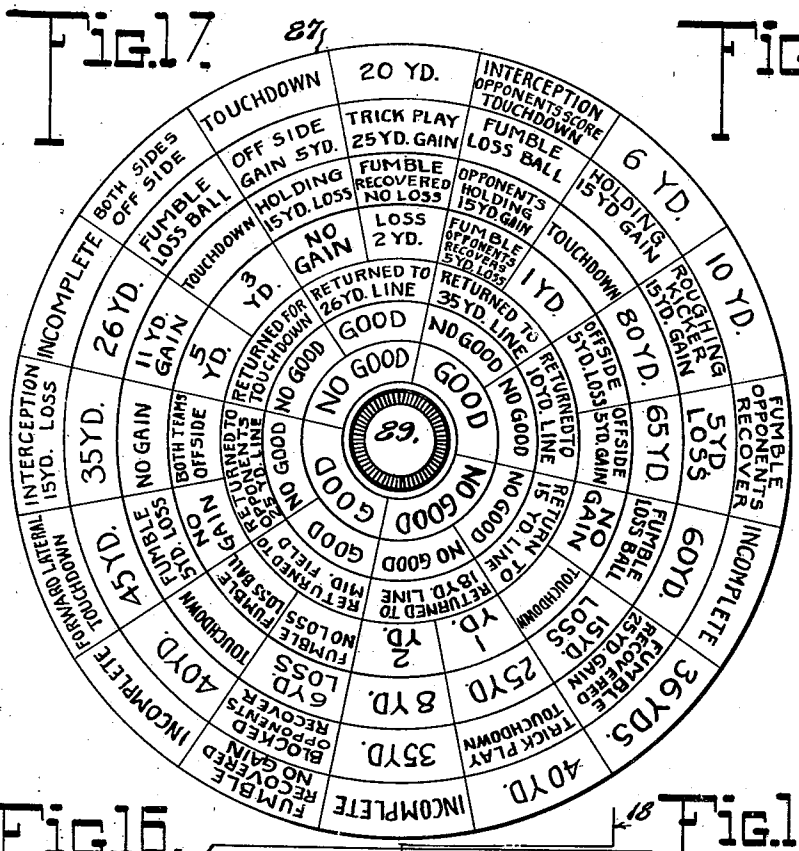


Fig. 18.

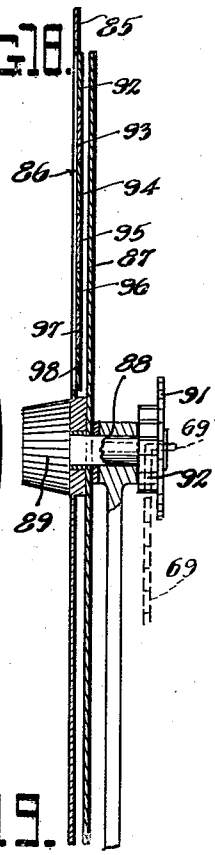


Fig. 16.

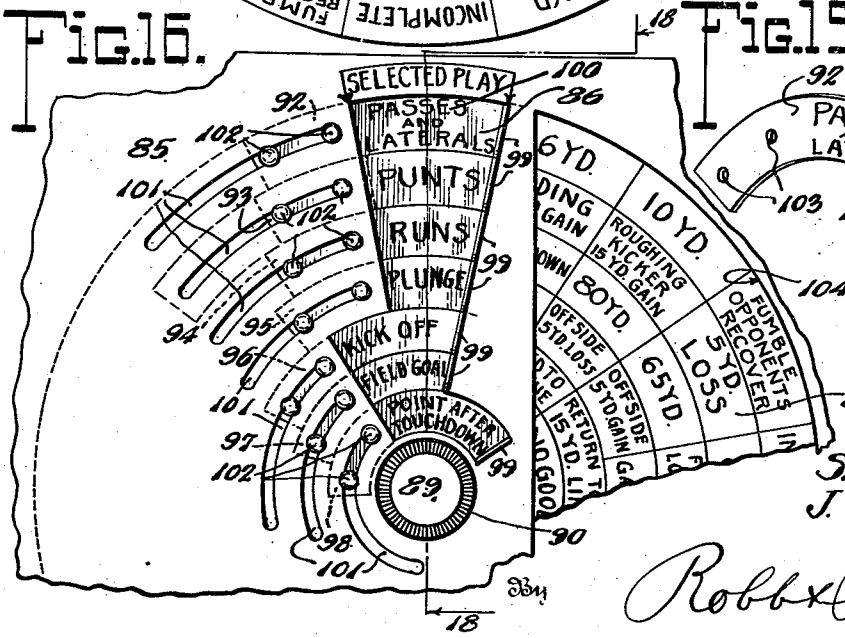


Fig. 19.

Patented Nov. 21, 1939

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UNITED STATES PATENT OFFICE

2,180,478

GAME APPARATUS

Stanley Pekalski and Joseph Bennis, Greenfield, Mass.

Application April 4, 1938, Serial No. 200,004

12 Claims. (Cl. 273—94)

This invention appertains to a novel game apparatus, and more especially, to an apparatus which is primarily intended to simulate the game of football in the use thereof.

In developing our invention, it has been our aim to provide an apparatus which constitutes not only an amusement device which appeals to the interest of children and adults, but which also constitutes an educational device by which the game of football may be taught and explained to those having little or no knowledge of the game, thereby serving to encourage and promote interest in the game.

Our new game device is also particularly useful as an aid to the mental picturization of a regular outdoor game of football, particularly as broadcast over the radio or reported by telephone or telegraph, in that the play-by-play reports of the game can be effectively portrayed and visibly reproduced by manipulating the various elements of the apparatus in a manner which will hereinafter be more fully described. Thus our invention may be said to be a multi-purpose device which may be operated either as a game involving the element of chance or surprise, or as a device for faithfully and accurately reproducing preconceived or preexecuted plays of a game of football.

In carrying out our invention, one of the primary objects is to provide a movable field having opposing football teams delineated thereon or otherwise associated therewith in such manner as to move with the field, the field preferably comprising a flexible belt arranged so that the entire playing field of appropriate proportionate size is always presented to view irrespective of the movements thereof.

It is a further object of the invention to also provide means for indicating longitudinal subdivisions of the field, said means being preferably arranged at the opposite side boundaries of the field. If desired, suitable longitudinal subdivisions may be delineated directly upon the field, in which case, the same are preferably transversely extended thereacross for cooperation with the indications arranged at the side boundaries.

A still further object of the invention is to provide longitudinally adjustable means in association with the movable playing field for marking the progress of the ball in a manner corresponding to the usual practice followed by the linesmen who are normally stationed along the side lines in an actual game of football.

As embodied in a form which is best suited for use as an amusement device, our invention preferably includes a play selector which may be operated by the persons playing the game to direct the plays, and thus control the progress of the game. While the play selector or indicator may be of any appropriate form, we have shown in the drawings, and there will be hereinafter described, a novel form of such a device which is unusually simple in construction yet capable of selecting and indicating practically an infinite number of plays corresponding to those employed in an actual game of football. Hence, the selector disclosed herein is eminently suited to our purposes.

Our invention further contemplates the provision of a simple and compact scoreboard, by means of which the progress of the game can be visually recorded.

Other and further objects and advantages of the invention will be hereinafter described, and the novel features thereof defined in the appended claims.

In the drawings:

Figure 1 is a top plan view of a device constructed in accordance with our invention and in which the shiftable field has a separate element adjustably mounted thereon, and on which adjustable element the opposing football teams are depicted. This adjustable element is shown in full lines in a position corresponding to the advancement of the ball by the offensive team towards the righthand end of the field as viewed in Figure 1, and in dotted lines in a reverse position corresponding to the conditions in which the ball is being advanced in the opposite direction by the opposing team;

Figure 2 is a vertical longitudinal fragmentary sectional view, taken on the line 2—2 of Figure 1;

Figure 3 is a vertical transverse sectional view, taken on the line 3—3 of Figure 2;

Figure 4 is a detail perspective view of the adjustable element on which the team lineups are delineated, and particularly showing the means for permitting lateral and pivotal adjustment of the same;

Figure 5 is a detail perspective view of the adjustable play marking element corresponding to the chain marker employed in an actual football game, the marking element being shown detachably mounted upon a slide for guiding the movements of the same longitudinally along the margin of the playing field;

Figure 6 is an enlarged fragmentary detail side view, disclosing more particularly the manually operable means by which the shiftable playing

field is moved to accord with the progress of the ball during the course of playing the game;

Figure 7 is an end elevation of the apparatus, disclosing the scoreboard at one end thereof and also generally disclosing the play selector which is of the spinner type;

Figure 8 is a view in front elevation of one of the play selector or spinner discs having play indicating indicia thereon;

Figure 9 is a view generally similar to Figure 8, illustrating another one of the spinner discs of the play selector;

Figure 10 is a view similar to Figures 8 and 9, illustrating still another of the spinner discs which, together with the discs of Figures 8 and 9, direct the play of the game;

Figure 11 is a view in elevation of a shutter which forms a part of the play selector or spinner device and which is shiftably mounted so as to be adapted to mask the play indicating indicia on certain of the spinner discs under certain conditions of play, particularly the play of trying for the point after scoring a touchdown;

Figure 12 is a fragmentary detail view in elevation of the disc actuating mechanism by means of which rotation or spinning movement is imparted to the several discs illustrated in Figures 8, 9 and 10 in directing the plays of the game when the apparatus is used as an amusement game device, the mechanism being shown in full lines with the parts thereof in their condition at the commencement and completion of the disc operating action, and in dotted lines at the commencement of the actual spinning impulse;

Figure 13 is a vertical sectional view, taken approximately on the plane indicated by the line 13—13 in Figure 12, and also showing, partly in section and partly in elevation, the spinner discs and associated parts of the complete selector or spinner assembly;

Figure 14 is a perspective view of a slightly modified form of shiftable playing field representing part wherein the team lineups are delineated directly upon the field which is in the form of an endless web or belt, and the lineups are depicted on both reaches thereof, and are arranged for selective use according to the direction of advancement of the ball in opposite directions respectively; and

Figure 15 is a view generally similar to Figure 1, but embodying the type of field illustrated in Figure 14, a portion of the structure being broken away at one end to show more clearly the actuating mechanism for shifting the field representing element.

Figure 16 is a modified form of spinner device employing a single disc which may be substituted for the twin disc unit and associated play masking slides.

Figure 17 is a plan view of the disc illustrating the associated playing data thereon.

Figure 18 is a vertical sectional view on the line 18—18 of Figure 16.

Figure 19 is a detailed, perspective view of one of the masking slides.

In general, the apparatus in its preferred form is composed of the following principal elements: a playing field including various markers and instrumentalities for simulating the movements of the ball and for indicating its position and the conditions of its play during the game; a play selector or spinner device which serves to direct the plays of the game; and a scoreboard for recording the various details of the game, such as the "Downs", "Yards to go", "Time to play", "Quarters" and the score of each team. These elements will now be separately described in detail.

Playing field

Referring particularly to Figures 1 to 6, inclusive, of the drawings, 1 generally designates a base, which is preferably of hollow, box-like form, closed on its sides and ends, but provided with a generally rectangular opening 2 in its upper face. The size of this opening 2 may be varied as desired, but it is preferably sufficiently large to define a substantial area which is proportioned to conform to the dimensions of an actual football field, but of course, on an appropriately small scale. Rotatably mounted within the base 1 and arranged transversely thereacross adjacent to its opposite ends respectively, is a pair of rollers 3 and 4, on which there is mounted an endless belt or web 5 with its upper reach disposed just below the opening 2 and in register with the same. This upper reach of the belt or web constitutes the playing field, which is generally designated 6. The entire field is continuously presented to view through the opening 2, and by this we mean that the distance between the opposite ends 7, 7 of the opening 2. The opposite side edges 8, 8 of the opening 2 define the side lines of the playing field, and upon the upper face of the base 1 and contiguous to the opposite edges 8, 8 of the opening 2, we preferably provide suitable indicia 9, representing the usual major longitudinal subdivisions of a playing field. As shown, the subdivisions 9 are designated to represent every ten yards, starting from each of the edges 7, 7, of the opening 2 and progressing to the mid-point designated M, representing mid-field. Thus it will be understood that the ends of the playing field 6, which is represented by the upper reach of the endless web 5, are defined by the opposite edges 7, 7, of the opening 2. If desired, the web 5 may be suitably marked with transverse lines so that the adjustable movements of the same may be more readily effected in cooperation with the indicator 9.

Beyond each of the edges 7, 7 of the opening 2, towards the respective opposite ends of the base 1, the upper surface of the base is appropriately marked or otherwise laid out to represent the opposite end zones of an actual football field, as indicated by the shaded areas designated 10, 10. Miniature goal posts 11, 11 may be mounted on the base 1 in any suitable manner, as shown best in Figure 2, for example, wherein the lower ends of the goal posts are shown extended through the upper surface of the base 1 and received in sockets 12, 12 disposed within the base so as to normally maintain the goal posts in a vertical position. The goal posts are preferably removable so that the game may be reduced to a compact size when not in use. Instead of providing removable or dismountable goal posts, the goal posts may be pivotally mounted on the upper surface of the base 1 so that they may be swung from their normally vertical positions to a downwardly folded position against the upper side of the base in an obvious manner.

In Figures 1 to 4, inclusive, we have shown one form of an instrumentality by which the opposing team lineups may be conveniently represented. As illustrated, this instrumentality comprises a plate 13, which may be composed of metal, Celluloid, cardboard or other material suitable for the purpose, and which preferably

has the general configuration of an arrowhead for the purpose which will hereinafter more fully appear. This plate 13 has delineated or otherwise indicated thereon two team lineups arranged in opposing relation, as best indicated at 13' in Figure 1, and hence will be hereinafter referred to as the team lineup indicator. The plate 13 is preferably pivotally mounted upon a slider 14, which in turn is slidably mounted upon a guide 15, the latter being suitably secured at its opposite extremities to the upper side of the portion of the endless web which constitutes the playing field 6. The guide 15 may have the form of a strip of Celluloid or other suitable light weight material, and is adapted to be mounted so that it extends transversely across the field 6, whereby to permit the team lineup indicator to be shifted laterally to any position of adjustment intermediate the side lines of the field. Being mounted upon the endless web, and the web in turn being mounted upon the spaced rollers 3 and 4, the team lineup indicator is longitudinally shiftable to any position intermediate the lines defined by the opposite edges 7, 7 of the opening 2. Thus the positions of the opposing teams 13' and the position of the ball 16 may be varied to any point, both laterally as well as longitudinally, within the boundaries of the playing field through suitable lateral adjustment of the slider 14 along the guide 15 and longitudinal adjustment of the shiftable field representing element. This latter adjustment may be effected by imparting rotation to one of the rollers on which the endless web 5 is mounted. As shown best in Figures 1, 2, 6 and 15, there is preferably provided a shaft 17 extending transversely through the base 1 and rotatably mounted therein, the shaft being extended outwardly at opposite sides of the base and provided with cranks 18, 18, by means of which rotation may be manually imparted to the shaft 17 at either end. A pinion 19 is fixedly mounted on the shaft 17, and meshes with a gear 20 which is in turn fixedly mounted upon the shaft 21 which carries the roller 4, the gearing being preferably selected to cause the roller 4 to rotate a sufficient amount to shift the playing field 6 the equivalent of ten yards for each revolution of the crank-shaft 17. If desired, the base 1 may have suitable graduations 22 indicated thereon in association with the cranks 18, as indicated in Figure 6, to indicate fractional parts of a complete revolution of the crank shaft, the graduations preferably being arranged to represent the shifting movement of the playing field in terms of one yard per graduation.

Reverting to the team lineup indicator 13, the sides thereof converge towards each other at one end, thus contributing to the generally arrowhead shape of this element, and the pointed end is intended to serve as a guide to indicate the direction of advance of the ball by the offensive team having possession thereof. Thus, the full line position of the plate 13, as shown in Figure 1, represents the condition of the ball in the course of advance towards the goal line G at the righthand end of the playing field 6. When the team having possession of the ball under the conditions just referred to loses possession of the ball, the plate 13 is then reversed to the position indicated by the dotted lines in Figure 1 by turning the plate about the axis of its pivotal connection with the slider 14. When so reversed, the pointed end of the plate 13 points towards the opposite goal line, and in other words, it indicates the condition of advancement of the ball towards the goal line G at the lefthand end of the playing field. In order to hold the plate 13 in its respective reversed positions, the plate may be provided with one or more indentations 23 arranged in spaced relation to the pivotal connection 24 which connects the plate to the slider, and the slider is provided with a plurality of cooperative protuberances 25, 25 which are selectively engageable in said indentations responsive to rotation of the plate 13 into its reversed positions. Since the position of the ball 16 is substantially at the center of the plate 13, the plate will overlap the end zone area as the field 6 is advanced to bring the ball into the vicinity of the goal lines G. As will be best seen in Figure 2, the plate 13 is spaced somewhat above the upper reach of the endless web 5 so that the plate may be freely projected over the surface of the base 1 which defines the end zones 10, and if desired, the extreme pointed end 13'' of the plate 13 may be curved upwardly slightly to minimize any tendency for the end of the plate to catch on the edge 7, 7 of the opening 2, and to assist in guiding the plate so that it can be extended over the end zones 10, 10 without interfering with the movement of the field 6 at least until the ball 16 has been advanced to the goal line.

In order to prevent the upper reach of the endless web 5 from sagging, and to aid in maintaining the playing field 6 in a substantially flat and smooth condition, a guide plate 26 is provided within the base 1 and is rigidly supported so that the upper reach of the endless web 5 passes over the upper face thereof, as will be best understood from reference to Figure 2.

In Figures 1, 2, 3 and 5, we have shown suitable adjustable markers arranged in cooperative relation with the playing field 6, and the adjustments of which are intended to represent the functions of the linesmen in an actual game of football. 27 generally designates what we have termed the chain marker in that it simulates the usual chain employed to measure along the side lines the distance which the ball must be advanced in an actual game in the usual allotted number of four "Downs". This member 27 may be of any suitable construction, and preferably embodies a pair of rods 31 detachably socketed, as at 28, 28, in a slider 29, the latter being slidably mounted in a guideway or groove 30. The groove 30 is formed in the base 1 contiguous to the longitudinal edge 8 of the opening 2 which defines the side boundary of the playing field 6. This marker construction is preferably duplicated at both sides of the playing field so that the marker at either side may be employed at will, just as in the case of an actual football game. The distance between the spaced vertical rods 31, 31 of each marker 27 represents ten yards, according to the standard length of the chain, and if desired, a chain may extend between the two rods 31—31 of the sliders 29, as indicated at 32. Each of the chain markers 27 may be longitudinally adjusted along its respective groove 30 to an infinite number of positions intermediate the goal posts 11, 11 at the opposite ends of the playing field. Hence, any condition of play which may be encountered in an actual football game may be faithfully and accurately reproduced by our apparatus.

Contiguous to each of the chain markers 27, there is provided an adjustable ball marker 33 which is intended to represent the usual stake marker used by the head linesman official in an actual football game. These ball markers 33 are

adjustable independently of the markers 27, and are preferably mounted for sliding adjustment along the field independently of the chain marker 27. In other words, the markers 33 each include a slider 34 and a guide 35, the latter being mounted on the base 1 contiguous to the grooves 30, 30. As the play of the game progresses, either of the ball markers 33 may be adjusted longitudinally along the side lines to indicate the position of the ball, as represented at 16 on the team lineup indicator 13.

Both the chain markers 27 and the ball markers 33 are preferably detachably mounted on base 1, but may be pivotally mounted to fold down against the base 1, so as to conserve space when not in use.

Play selector or spinner device

Passing now to the play selector or spinner device which we preferably embody in our new apparatus, and referring particularly to Figures 7 to 13, inclusive, we have shown a plurality of rotary discs, preferably three discs, which are respectively designated 36, 37 and 38. The discs are mounted to rotate about a common axis within a housing or casing, generally designated 39, the housing being provided with an opening 40 through which indicia on the several discs may be presented to view. The indicia are arranged circumferentially upon the faces of the respective discs adjacent to their outer margins, and the discs are of different size so that certain indicia on each disc may be simultaneously presented to view as the same come into register with the opening 40. The largest disc 36 is arranged towards the rear, as seen through the opening 40, and this disc has suitably delineated thereon indicia representing the various types of plays involved in an actual football game, such as "Kick off", "Punt", "End run", "Field goal", "Forward pass", etc., as best shown in Figure 8. Extending rearwardly from the center of the disc 36, is a sleeve 41, which is journaled in suitable supports designated 42, 42 disposed within the housing 39, as best seen in Figure 13. At the rearward extremity of the sleeve 41, there are provided a star wheel 43 and a toothed ratchet wheel 44, the same being fixed to the sleeve or formed as an integral part thereof.

Disposed in front of but closely adjacent to the disc 36 is the disc 37, which is generally similar in construction, excepting that it is smaller so as not to hide the indicia on the disc 36. Around the face of the disc 37 are arranged indicia representing various distances in terms of yards, as will be best understood from reference to Figure 9. Extending rearwardly from the disc 37 is a sleeve 45, which fits freely within the sleeve 41 and extends through the latter so as to permit relative rotation therebetween. The rearward extremity of the sleeve 45 likewise is provided with a star wheel 46 and a toothed ratchet wheel 47, the same being disposed contiguous to the corresponding parts of the disc 36.

In front of the disc 37, and closely adjacent thereto, is disposed the disc 38, which has indicia suitably depicted on its face, as shown best in Figure 10. In this instance, the indicia are arranged in concentric circles, the outer circle being made up of the expressions "Loss" and "Gain", and the inner circle being made up of the expressions "Good" and "No good". The inner circle has particular reference to the so-called "Try for point after touchdown" play, whereas the outer circle has particular reference to the progress of the ball as the various plays of the game are executed in trying for a touchdown. At peripherally spaced points about the disc 38, there is provided a plurality of radial extensions 38' which constitute masking shutters for masking or covering the indicia on the disc 37 when these shutters 38' respectively register with the sight opening 40. On the front face of each of the shutters 38' is depicted the expression "No", which is intended to be read simultaneously with the expression "Gain" which lies in the outer circle of indicia on the radius of each of the shutters, thus meaning "No gain".

Extending rearwardly from the disc 38 is a sleeve or shaft 48 which is adapted to be inserted through the sleeve 45 with a free fit permitting relative rotation therebetween. The rearward extremity of this part 48 is provided with a star wheel 49 and a toothed ratchet wheel 50 arranged contiguous to the corresponding elements of the other discs.

Whenever a condition of "Try for point after touchdown" is reached in the play of the game, we prefer to provide a means for masking or covering all of the indicia on the several discs 36, 37 and 38, with the exception of the inner circle of indicia on the disc 38. To this end, a shutter 51 is pivotally mounted, as at 52, on the casing 39 so as to be selectively shiftable from a position at one side of the sight opening 40, as indicated in dotted lines in Figure 7, to a position in register with the sight opening 40. The shutter 51 is itself provided with a small sight opening 53, which, when the shutter is shifted into register with the sight opening 40, permits the expressions "Good" and "No good" forming the inner circle of indicia on the disc 38 to be presented to view, all other indicia on the discs being hidden by the shutter 51. 54 designates a handle which projects forwardly from the shutter 51 through an arcuate slot 55 in the front of the casing 39, and by means of which the shutter may be conveniently manipulated at will from its operative to inoperative positions, and vice versa. The shaded portion 56 of the shutter 51 serves as an indicator to indicate that the shutter is in its inoperative position when this portion of the shutter is presented to view at the sight opening 40, and also serves to mask the inner circle of indicia on disc 38 when it is in this position just referred to.

Having described the several selector discs and their general functions, it will be understood that the discs are intended to be rotated in such a manner as to direct the plays of the game when the apparatus as a whole is to be employed as an amusement device. Provision is thus made for introducing the element of chance or surprise in the game, and the disc actuating mechanism will now be described. An operating lever 57, as best seen in Figures 7, 12 and 13, is pivotally mounted within the casing 39 as by journaling the same upon the sleeve 41, or otherwise pivotally mounting the same between the supports 42, 42, the lever extending upwardly above the upper end of the casing 39 and terminating in a handgrip 58, which is conveniently accessible to the players. The lever 57 has the form of a bell-crank, and to the free extremity of the arm 59, there is pivotally connected a latch 60, which is yieldably tensioned by means of a spring 61 so as to be normally urged in a clockwise direction about the axis of its pivotal connection 62 with the arm 59, as viewed in Figure 12. A tooth or abutment shoulder 63 on the latch 60 is pro-

vided to releasably engage a cooperating abutment pin 64 carried by a lever 65 which is pivotally mounted, as at 66, within the casing 39. This lever 65 is normally yieldably urged in a counter-clockwise direction about its pivotal axis 66 by means of a spring 67.

A stop pin 68, fixed to any convenient stationary part within the casing 39, serves to limit the downward movement of the lever 65 influenced by the spring 67.

To the free extremity of the lever 65, is pivotally connected a plurality of toothed racks 69, 70 and 71, the same being secured together at their lower ends, as at 72, so as to be simultaneously moved upwardly and downwardly responsive to upward and downward movements, respectively, of the lever 65. The teeth of the racks are so arranged as to cooperate with the respective toothed ratchet wheels 44, 47 and 50 hereinbefore referred to. For instance, rack 69 engages the ratchet wheel 44, and rack 70 engages ratchet wheel 47, and rack 71 engages the ratchet wheel 50. According to the arrangement illustrated herein, the racks impart rotation to the ratchet wheels responsive to downward movement only of the racks, and by reason of the pivotal interconnection of the racks with the lever 65, the teeth of the racks can ride by the teeth of the ratchet wheel during upward movement of the racks without imparting motion to the ratchet wheels. Light springs 73 are connected at one end to each of the multiple racks and at their opposite ends to the lever 65, as best seen in Figure 12, so as to normally urge the racks into cooperative engagement with the respective ratchet wheels.

The upper extremity of each of the racks is bent laterally, as at 69', 70' and 71', for cooperation with the respective star wheels 43, 46 and 49, whereby to cause the respective discs 36, 37 and 38 to assume positions in which the indicia carried thereby become properly registered with the sight opening 40 at the completion of each spinning operation of the discs. In other words, each disc will always stop in a position with the laterally bent portion of the upper extremity of its corresponding rack received within one of the notches lying between the contiguous teeth of the corresponding star wheel.

The spinning impulse is imparted to each disc simultaneously by the tension of the spring 67, and to this end, the latch 60 is provided at its lower end with a camming tail 60' which coacts with the stop pin 68 so as to cam the latch 60 in a counter-clockwise direction about its pivotal axis 62 as the lever 65 approaches the upper limit of its movement about its pivotal axis 66, thereby disengaging the abutment shoulder 63 from the pin 64. The lower extremity of the tail 60' of the latch is preferably hook-shaped, as at 60'', so that it will ultimately engage the stop pin 68 and thereby limit the pivotal movement of the bell-crank lever 57, to which the latch 60 is connected at 62.

To operate the spinner device, the operator grasps the handle 58 of the operating lever 57 and swings the same in the direction of the arrow from its full line position shown in Figure 12, to the dotted line position. This swinging movement causes the arm 59 of the bell-crank operating lever 57 to move upwardly and lift the latch 60 upwardly, resulting in a corresponding upward movement of the lever 65 and racks 69, 70 and 71 to their dotted line positions shown in Figure 12. As the operating lever approaches the limit of its motion to the left, as predetermined by the engagement of the hook 60'' on the tail 60' of the latch 60 with the stop pin 68, the tail 60' rides on the stop pin 68 and cams the latch to the right against the tension of the spring 61, thereby disengaging the shoulder 63 from the pin 64 on the lever 65, whereupon the tension of the spring 67 acts upon the lever 65 to quickly pull the lever 65 downwardly until its downward movement is arrested by engagement of the stop pin 68. This downward movement of the lever 65 imparts a spinning movement to the discs 36, 37 and 38 through means of the respective racks 69, 70 and 71 and cooperating ratchet wheels 44, 47 and 50. By reason of the yieldable action of the light tension springs 73, the inertia of the spinner discs becomes effective to sustain the initial spinning action imparted to the discs by the power of the spring 67, and until the friction overcomes the spinning forces. Since the discs are of different sizes and are free to rotate relative to each other after they have been set into motion by the spring 67, different combinations of the indicia carried by the several discs will appear at the sight opening 40 when the spinner device is successively operated. After the operating lever 57 has been moved to the limit of its shiftable movement to the left, as viewed in Figures 7 and 12, it is to be returned to the right to condition the spinner device for a succeeding operation, the return being accomplished either manually or automatically, as by means of a spring, and effecting re-engagement of the abutment shoulder 63 with the pin 64.

Scoreboard

The scoreboard is perfectly constructed as a part of the play selector or spinner unit, although this may be varied as desired. According to the arrangement illustrated in the drawings, the scoreboard comprises a plurality of counter-discs which are rotatably mounted behind the front face of the housing 39 adjacent to the upper end thereof. Notches 74, 75 and 76 are provided at the upper edge of the front wall of the housing 39 so as to expose to view the indicia-bearing portions of the respective discs 77, 78 and 79, and also to enable these discs to be manually rotated by the operator's thumb or fingers to bring the appropriate indicia into register with the notches according to the progress of the game. For example, the counter-disc 77 preferably bears the numbers 1 to 4, inclusive, to indicate the "Downs"; disc 78 bears the numbers 1 to 10 or more, inclusive, to indicate the "Yards to go"; and disc 79 also bears the numbers 1 to 4, inclusive, to indicate the "Quarter". A pointer 80 coacting with suitable numerals, as 1 to 15, is preferably pivotally mounted on the front of the casing 39 to indicate the "Time to play". Provision is also preferably made, as generally indicated at 81, for recording the score of the opposing teams.

As previously mentioned, the play selector or spinner device and the scoreboard are preferably combined into a combination unit, and for the sake of conserving space when the apparatus is not in use, the unit is preferably foldable against the base 1 or otherwise dismountable so that the apparatus may be reduced to a relatively flat and compact form for shipping or storage purposes.

Modified playing field

Referring to Figures 14 and 15, there is shown a somewhat modified form of playing field **82** of the endless web or belt type, generally corresponding to the endless web **5** hereinbefore described. The construction differs from the construction previously described in that the team lineups indicated at **83** and **84** are delineated directly upon the upper and lower reaches of the web, and hence have no movement independently of the web, as in the case of the rotary and laterally shiftable plate **13**. In the use of this modified playing field construction, the respective team lineups **83** and **84** are selectively brought into use according to the direction of advance of the ball. For instance, as shown in Figure 15, the endless web has been shifted by means of one of the cranks **18** on the gear shaft **17** which is geared to the roller **4** which supports the web at one end so as to bring the lineup **83** into view. The arrowhead shaped outline **83'** points to the right, as seen in Figure 15, and indicates that the direction of advance of the ball is towards the righthand end of the apparatus. Now when the opposing team takes possession of the ball, and the direction of advancement of the ball is towards the other end of the field, the web is shifted by rotating the crank-shaft **17** to bring the other team lineup **84** into view, in which case the lineup **83** will be disposed on the lower reach of the web and out of sight. The arrowhead shaped outline **84'**, when brought into view as the portion of the field upon which it is delineated become the upper reach of the web, points to the left, and indicates the direction of advance of the ball towards the lefthand end of the apparatus. Since the apparatus may otherwise be identically the same as already described, further description of the modified playing field construction is unnecessary.

Operation

Having described our invention in detail, the use thereof will be obvious and is briefly summarized as follows, having particular regard for its use as an amusement device: Any suitable rules may be set for the game as desired, but they are preferably the same as in an actual football game. The game may be played by one or more players, preferably at least one player on each of two sides to represent the opposing teams. If there is more than one player on each side, the different players may be assigned the different tasks of manipulating the various adjustable parts of the apparatus. For example, one player may be selected to operate the play selector or spinner device; another player to operate the crank-shaft **17** by means of which the playing field is adjusted to accord with the movements of the ball as determined by the spinner device; another player to adjust the chain marker **27**; another player to adjust the ball marker **33**; and so on, all to the end that a number of players may directly participate in the game. On the other hand, all of these adjustments may be effected by one or any limited number of players.

To start the game, a coin may be tossed to determine which side is to commence the play, after which this player or team of players will actuate the play selector or spinner device until a "Kick off" play is indicated thereby, this play to be executed on the field by moving the endless web with the team lineups and ball represented thereon to the position directed by the indicia on the spinner discs as indicated by the the indicia **9** along the side lines of the playing field. To add interest to the game, a limited number of spins at the outstart of the game may be prescribed so that one team of players will not spend too long a time trying to secure a "Kick off" play reading on the play selector or spinner device. As the play progresses, the dials **77**, **78** and **79** and the pointer **80** should be manually adjusted to accord therewith in an obvious manner, and the scores can be kept by filling in the spaces provided therefor on the scoreboard at **81**.

The playing field **6** or **82**, as the case may be, should be adjusted in one direction or the other according to whether or not the various plays indicated by the selector or spinner device represent a gain or loss of distance, and the plays continue until the playing team loses possession of the ball, figuratively speaking, as determined by the usual rules of a football game. When this condition arises, and the opposing team gains possession of the ball, so to speak, the opposing player or players take over the play, which is to say, they actuate the play selector or spinner device and adjust the movable playing field and associated markers and indicators in the same manner as has already been described. The team lineup indicator plate **13** is first reversed from its initial position so as to appropriately represent the progress of the ball towards the opposite goal line, as will be best understood from reference to Figure 1 wherein the plate **13** is shown in full lines in one position of its adjustment, and in dotted lines in its reversed position. In the case of the modified construction illustrated in Figures 14 and 15, the change in the direction of advance of the teams and ball is attained by shifting the playing field **82** to selectively bring to view those portions of the playing field having the team lineups directly delineated thereon, with the ball and teams occupying the proper positions between the opposite goal lines G, G as determined by the indicia **9** disposed along the side lines. After making the proper selection and adjustment as just referred to, the playing field **82** is then shifted in one direction or the other as the plays progress, and according to whether the plays represent a gain or loss in distance with respect to the reference point determined by the chain marker **27** and ball marker **33**.

Whenever a touchdown is scored by either team, the shutter **51** which forms a part of the play selector or spinner device is manually shifted to bring the aperture or sight opening **53** into registry with the sight opening **40** in the front of the casing **39**, following which the operating lever **57** is shifted by means of the handle **58** to determine the success or failure of the "Try for point after touchdown", which will be indicated as "Good" or "No good" at the sight opening **53**, all other indicia on the spinner discs being hidden by the shutter **51** and thereby avoiding confusion. Upon completion of such a play, the shutter should then be manually shifted to its inoperative position indicated in dotted lines in Figure 7, thus conditioning the spinner device for succeeding plays as directed by the indicia on the several spinner discs which appear at the sight opening **40** following each spin thereof.

The termination of the game and of each "Quarter" thereof may be determined by the

lapse of time which may be initially set and agreed upon at the commencement of the game. Thus the time may be the same as in an actual game, or any lesser or greater time may be agreed upon as desired. On the other hand, instead of using time as the determining factor, a certain number of plays may be allotted to each side playing the game.

The combination play selector or spinner device and scoreboard is preferably disposed at one end of the base 1, where it is conveniently accessible and visible to the players of both sides or teams. Instead of employing the play selector or spinner device, any predetermined play or succession of plays may be reproduced through suitable adjustments of the playing field, markers and indicators, thus constituting an effective educational apparatus. It is especially effective to reproduce the plays of an actual football game as broadcast over the radio or announced by wire, telephone or other communication system, in which case the lateral adjustability of the team lineup plate 13 is particularly advantageous to simulate the movements of the teams and ball both laterally as well as longitudinally, as the plays occur in an actual game.

In view of the complicacy of the spinner device hereinbefore described, we have illustrated in Figures 16 to 19 the preferred form of spinner device for use in conjunction with this game. The modified spinner device is simplified to the extent that a single disc is employed embodying substantially all the plays and problems involved in playing the game and affords an opportunity for the players to select a particular play to be made with a determination as to the success of the play.

This modified form consists of a panel member 85, as best seen in Figures 16 and 18. This panel member may be similar to the score-board shown in Figure 7 and have the indicating members 74 to 80 arranged thereon as well as the team score. The panel member is provided with a window or view opening 86. A spinner member or disc 87 is disposed behind the panel and mounted for rotation in any suitable manner, such as by a bearing support 88, and is preferably provided with a spinning knob 89 fixed to the disc and projecting through a central opening in the panel as indicated at 90. The spinner member or disc 87 may be provided with a star wheel 91 and ratchet disc 92 for cooperation with a disc spinning rack, not shown, but of a type similar to the rack 69 in Figure 12. The face of the disc 87 adjacent the panel 85 is provided with data pertaining to the game and representing substantially all of the plays to be made. This data is disposed in concentric rings or zones around the disc, each zone determining a play or play value having a fixed relation to restrictive play data on masking means associated with the opening 86 in the panel. This masking means comprises a plurality of segmental shutters or slides 92, 93, 94, 95, 96, 97 and 98, any one of these slides being designed to mask a certain concentric ring of data on the spinner disc. The masking shutters are all similar in construction, and, therefore, only one will be described in detail, as best seen in Figure 19.

The shutters are preferably formed of sheet metal having one end bent to form a finger operating portion 99 and data on the face thereof as indicated at 100 representing the selected play. The panel 85 is preferably provided with arcuate slots 101 to receive guide pins 102 secured in apertures 103 in the play selecting shutters or masking members 100, previously referred to.

In playing the game with this modified form of spinner device, the play selecting shutters are all moved to the right to the position shown in Figure 16. The player may, if he desires, observe that portion of the spinner disc 87 visible through the large opening 104 to the right of the selected play opening, and from that portion of the data visible he may determine the probable play that he wishes to make, such as a pass or lateral, or a punt, etc., since the data visible will to some extent indicate his chances of success. He then rotates the knob 89, or, if used with the spinning mechanism of Figure 12, actuate the operating handle, thus spinning the disc. When the disc comes to rest he will then grasp the finger piece 99 of the selecter shutter, moving that shutter to the left exposing to view that portion of the concentric ring of data in the opening 86 relating to the data 100 on the shutter 92 that was opened. After being informed of the result of the selected play, as indicated on the selected disc, the player will operate the crank 18 to shift the belt or web 6 and thereby move the team lineup plate to the indicated position. If, for instance, the player desired to try for a pass, the upper shutter 92 would be opened after the disc was spun, and should the ten-yard indicia register with the opening the belt would be shifted to advance the team lineup plate ten yards, if, however, the disc stopped so that the indicia to the right of the one just mentioned registered with the opening presented to view by movement of the shutter 92 to the left, it would indicate that the team lost the ball due to a fumble in an attempted pass. The slide member adjacent the knob 89 functions in the same manner as the shutter 51 of Figure 11. In other words, when it is desired to find out if the "Try for point after touchdown" selection is good, the disc is rotated, and after it stops the innermost slide is opened and the concentric ring of data in this zone is viewed through the opening indicating whether the play is "Good" or "No good".

It is to be understood that our invention, in its broad aspect, is not limited to use in simulating a football game, as it is equally applicable to other games such as basketball, hockey, soccerball, lacrosse, and other games of a like nature wherein a ball or other object is moved in opposite directions over a playing field disposed intermediate opposed scoring zones. In such applications, the indicia on the spinner discs would be modified to accord with the plays which are characteristic of the respective games.

While the specific details of the invention have been herein shown and described, the invention is not confined thereto, as changes and alterations may be made without departing from the spirit thereof as defined by the appended claims.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. Apparatus of the class described, comprising a body having a rectangular opening in one side thereof proportioned to conform to the side and end boundaries of a playing field, a member of substantially greater length than the opening in the body and disposed contiguous to said body and having a flat surface registering with said opening and shiftable in opposite directions, the margins of said opening defining a corresponding field of play on said member and also defining scoring zones at the opposite exposed ends there-

of, a game piece carried by said member intermediate its opposite ends, said body having supporting means for supporting said member during its shifting movements, and including means for shifting said member.

2. Apparatus of the class described, comprising a body having a rectangular opening in one side thereof proportioned to conform to the side and end boundaries of a playing field, a member disposed contiguous to said body and having a flat surface registering with said opening and shiftable in opposite directions, the margins of said opening defining a corresponding field of play on said member and scoring zones at the opposite exposed ends thereof, and the member having a football or similar playing object represented thereon so as to be movable therewith between the scoring zones, and means mounted on said body for supporting said member and including means for shifting said member.

3. Apparatus of the class described, comprising a body having a rectangular opening in one side thereof proportioned to conform to the side and end boundaries of a playing field, a member disposed contiguous to said body and having a flat surface registering with said opening and shiftable in opposite directions, the margins of said opening defining a corresponding field of play on said member and scoring zones at the opposite ends thereof, a team lineup indicator and means for adjustably mounting the same on the shiftable member so that the indicator is movable therewith between the scoring zones, and means for supporting and shifting said member.

4. Apparatus of the class described, comprising a body having a rectangular opening in one side thereof proportioned to conform to the side and end boundaries of a playing field, a member mounted on said body and disposed contiguous to said body and having a flat surface registering with said opening and shiftable in opposite directions, the margins of said opening defining a corresponding field of play on said member and scoring zones at the opposite ends thereof, and the member having a team lineup indicator pivotally mounted thereon for selective adjustment in reversed positions and movable therewith between the scoring zones, and means for shiftably supporting said member.

5. Apparatus of the class described, comprising a body having a rectangular opening in one side thereof proportioned to conform to the side and end boundaries of a playing field, a member disposed contiguous to said body and having a flat surface registering with said opening and shiftable in opposite directions, the margins of said opening defining a corresponding field of play on said member and scoring zones at the opposite exposed ends thereof, and the member having a team lineup indicator adjustably attached thereto to move therewith and permit movements thereof normal to the shiftably supporting movement of the member, and means for shifting said member.

6. Apparatus as claimed in claim 1, wherein the shiftable member comprises a flexible web or belt of greater length than the rectangular opening and substantially equal in width to the width of the opening.

7. Apparatus as claimed in claim 1, wherein the shiftable member comprises a flexible web or belt of greater length than the rectangular opening and substantially equal in width to the width of the opening, and the means for shifting the member including a pair of rollers rotatably mounted adjacent to opposite ends of the body and on which the web or belt is mounted.

8. Apparatus as claimed in claim 1, wherein the shiftable member comprises an endless web or belt having one reach thereof at least as long as the rectangular opening, and the width of the same being substantially equal to the width of the opening.

9. Apparatus of the class described, comprising a body having a rectangular opening in one side thereof proportioned to conform to the side and end boundaries of a playing field, a member of substantially greater length than the opening in the body and disposed contiguous to said body and having a flat surface provided with equally spaced transverse lines simulating a football field and being shiftable in opposite directions, the margins of said opening defining a corresponding field of play embracing a proportionate number of transverse lines on said member and also defining scoring zones at the opposite exposed ends thereof, a game piece simulating a football carried by said shiftable member so as to move therewith, means for shiftably supporting said member, and marker means adjustably mounted on the body at the side of said opening and movable independently of said shiftable member but in coordination with the transverse lines thereof.

10. Apparatus of the class described, comprising a body having a rectangular opening in one side thereof proportioned to conform to the side and end boundaries of a playing field, a member of substantially greater length than the opening in the body and disposed contiguous to said body and having a flat surface provided with equally spaced transverse lines simulating a football field and being shiftable in opposite directions, the margins of said opening defining a corresponding field of play embracing a proportionate number of transverse lines on said member and also defining scoring zones at the opposite exposed ends thereof, a game piece simulating a football carried by said shiftable member so as to move therewith, means for shiftably supporting said member, and marker means slidably mounted on the body at the side of said opening and movable independently of said shiftable member but in coordination with the transverse lines thereon.

11. Apparatus of the class described, comprising a body having a rectangular opening in one side thereof proportioned to conform to the side and end boundaries of a playing field, a member of substantially greater length than the opening in the body and disposed contiguous to said body and having a flat surface provided with equally spaced transverse lines simulating a football field and being shiftable in opposite directions, the margins of said opening defining a corresponding field of play embracing a proportionate number of transverse lines on said member and also defining scoring zones at the opposite exposed ends thereof, a game piece simulating a football carried by said shiftable member so as to move therewith, means for shiftably supporting said member, and the body having distance representing indicia along the side of the rectangular opening and constituting distance identifications for the transverse lines on shiftable member with reference to the end scoring zones aforesaid.

12. Apparatus of the class described, comprising a body having a rectangular opening in one side thereof proportioned to conform to the side

and end boundaries of a playing field, a member of substantially greater length than the opening in the body and disposed contiguous to said body and having a flat surface registering with said opening and shiftable in opposite directions, the margins of said opening defining a corresponding field of play on said member and aso defining scoring zones at the opposite exposed ends thereof, said shiftable member comprising an endless web or belt have reversed team lineups delineated in spaced positions on the surface thereof for selective registration with the opening in the body, and said body having supporting means for supporting said shiftable member during its shifting movements, and including means for shifting said shiftable member.

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