W. RASTER.

GAME APPARATUS.

APPLICATION FILED JUNE 6, 1914.

1,119,452.

Patented Dec. 1, 1914.

2 SHEETS—SHEET 1.

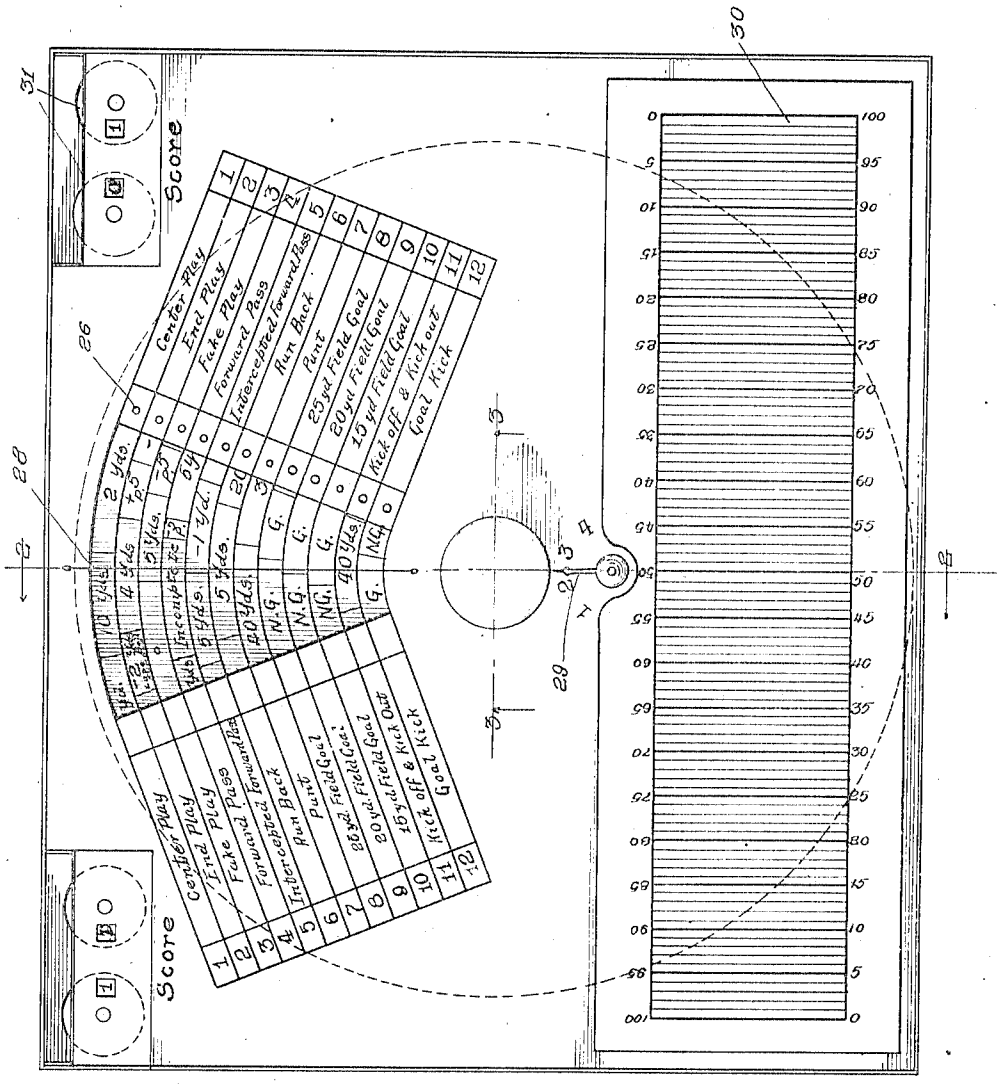

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 4.

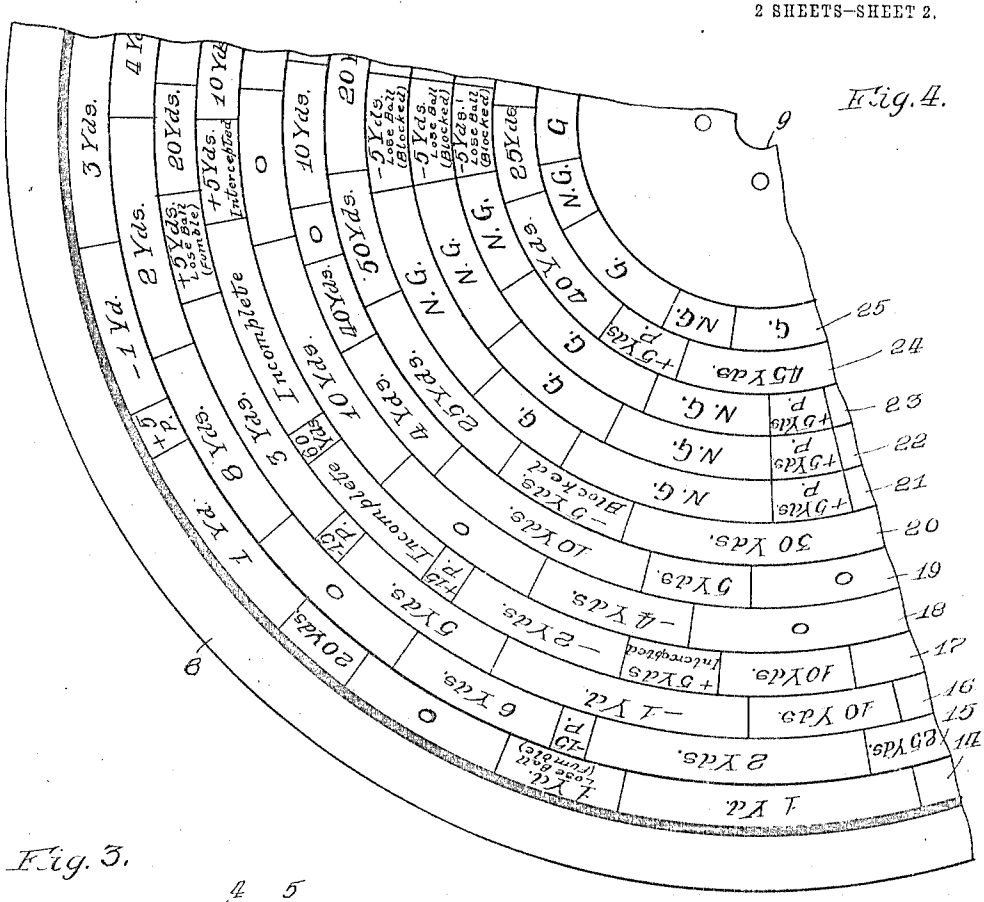


Fig. 3.

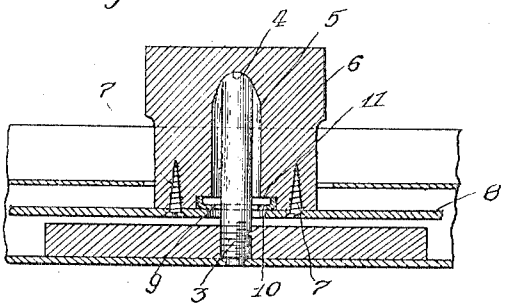
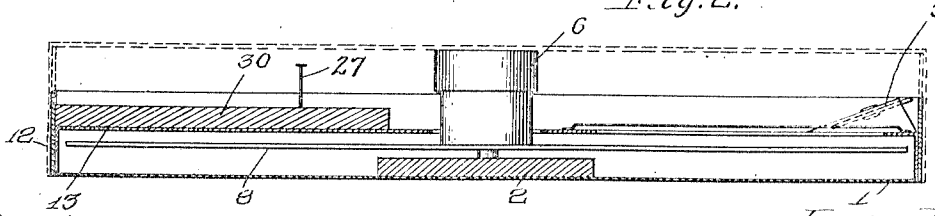


Fig. 2.



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UNITED STATES PATENT OFFICE.

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GAME APPARATUS.

1,119,452. Specification of Letters Patent. Patented Dec. 1, 1914.

Application filed June 6, 1914. Serial No. 843,566.

To all whom it may concern:

Be it known that I, WALTHER RASTER, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Game Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to game apparatus and more particularly to an apparatus for enabling two players (or a larger number of players taking two sides) to play a game according to the standard rules of foot-ball.

One object of my invention is to provide a game apparatus which will offer each player the choice of the usual variety of plays as ordinarily available to the side holding the ball, and in which each of the said plays will permit of the various results encountered with the respective plays in foot-ball as actually played out of doors.

Another object of my invention is to provide for each of a number of different plays consecutively undertaken by the player nominally in possession of the ball a series of alternative results, the possible results in each series being so balanced as to offer substantially the same probabilities of favorable and unfavorable results in the case of each group of consecutive plays.

A further object is to provide a game in which the attempts at kicking goal from the field will increase in the probable favorable outcome in proportion as such a play is made from points nearer the goal.

Other objects of my invention are to provide a dial and indicator arrangement in which the indication of the results of the play may readily be ascertained with certainty and to provide an auxiliary indicator for showing the play or move in the game assumed to be undertaken in each instance on the grid-iron.

Still other objects of my invention are to provide a simple and cheaply constructed support for a rotating disk, to equip the rotating member of such a game apparatus with means for limiting the relative tilting of the latter without straining the relatively fragile disk, and to provide means for readily increasing or decreasing the friction encountered by the rotating member in moving upon its pivot.

Still other objects will be apparent from the following specification and from the drawings, in which—

Figure 1 is a plan view of a game embodying the various features of my invention. Fig. 2 is a fragmentary vertical section through Fig. 1 along the line 2—2. Fig. 3 is an enlarged vertical section through Fig. 1 along the line 3—3. Fig. 4 is a fragmentary plan view of the rotating disk forming part of the game.

In the embodiment of the drawings, the game of my invention is shown as mounted in a rectangular box 1 having a block of wood 2 centrally disposed upon the bottom thereof. Screwed into the said block or base 2 and extending vertically above the same is a metal standard or post 3 equipped with a rounded upper end 4 engaging the correspondingly rounded upper end of the vertical bore 5 of a knob or socket member 6. Secured to the lower end of the said knob 6 by fastening means such as screws 7 is a disk or dial 8 of cardboard or other suitable material, which disk is imprinted with a series of markings arranged between concentric circles as shown in Fig. 4. When the said post, knob and disk are in their above described relative positions, as shown in Fig. 3, it will be obvious that the end 4 of the post forms a pivotal mounting for the said knob and disk, thereby permitting the latter two members to be readily rotated about or spun upon the said post by manually grasping and twirling the knob 6. The bore 5 of the knob is preferably considerably larger in diameter than the post 3 so as to prevent a frictional engagement between the main portion of said bore and the circumferential faces of the post. However, such a difference in size between the said bore and the exterior of the post

will readily permit a relative tilting of the knob with respect to the post, which tilting might be apt to damage the relatively frail central portions 9 of the disk by impact against the said post. To avoid this and to afford a guide for limiting the relative tilting of the knob with respect to the post, I preferably enlarge the said bore 5 of the knob at its lower end and slip into the said enlarged portion of the bore a metal washer 10, of such size as slidingly to fit the said enlarged portion of the bore. The said metal washer is also preferably of such height as to be clamped between the smaller bored portion 11 of the knob and the inner portion 9 of the disk when the said disk is secured to the knob by the screw 7. It will be obvious from Fig. 3 that by equipping the said washer with a bore smaller than that of the disk 8, the edge of the said washer will bear against the post 3 to limit the tilting of the knob 4 (and consequently of the disk 8) with respect to the said post, thereby also preventing the said post 3 from bearing against and damaging the inner portion 9 of the said disk. It will also be evident that by rounding both the top of the post 4 and the upper end of the recess or bore 5 of the said knob, I can provide a pivotal mounting for the knob and disk which will afford a moderate amount of friction, thereby causing the disk to come to rest with more certainty than if the post and knob were equipped with coöperating conical portions. Moreover, the friction between the said members can readily be reduced by rubbing a suitable anti-friction material, such as graphite, upon the upper end of the post; or the said friction may be increased by rubbing chalk upon the upper end of the said post.

Mounted within the box 1 and supported by depending flanges 12 is a cover plate 13, which plate is disposed slightly above the disk 8 and is equipped with a central perforation permitting the knob 6 to project upwardly above the said plate 13. The plate 13 is provided with a substantially sector-shaped opening exposing a portion of the disk 8, which disk carries a plurality or series of markings arranged in the concentric rings numbered respectively as 14 to 25 inclusive. The opposite edges of the said opening in the plate 13 preferably extend radially of the common axis of the disk 8 and post 3, so as to intersect all of the said rings substantially radially. Adjacent to each of the said lateral edges of the said opening in the plate 13, the said plate is provided with a series of markings arranged in twelve parallel fields extending substantially at right angles to the said edges of the opening, which fields carry designations corresponding to the twelve different plays commonly undertaken at various steps in the game of foot-ball. The cover plate 13 is equipped within each of the said fields near the adjacent edge of the said opening with a socket 26, all of the said sockets being adapted interchangeably to receive a play-designating peg 27, which peg is inserted into one of the said sockets to indicate the proposed play before the disk 8 is rotated by manipulating the knob 6.

Each of the concentric rings upon the disk 8 is divided into a series of fields marked to correspond with the various results obtainable by the plays indicated upon the field on the plate 13 alining with and partially overlapping the said ring, the markings in each of the said rings being proportioned substantially in accordance with the probabilities of the results actually observed with similar plays in actual practice. For example, in trying to force the ball through the line by a center play, as implied by the outer ring 14, a gain of one yard is much more probable than one of twenty yards, while a gain of twenty yards is likewise more probable than a five yard penalty for the opponent. Consequently, the divisions of the said ring are proportioned to the said probabilities of progress or "ground gaining." Likewise, referring to ring 17 which corresponds to an attempted forward pass, an incomplete pass is much more probable than either an intercepted pass or a gain of ground, while a gain of ten yards is more highly probable than one of sixty yards, and the correspondingly marked divisions are proportioned accordingly.

It will be obvious that in playing according to the accepted rules of foot-ball, each player will continue to play as long as he is in nominal possession of the ball, so that the number of consecutive times which each player rotates the disk may vary greatly. To allow for this variation, I preferably proportion the divisions in the respective rings in such a way that while no two rings are similarly divided, the probability of "gaining ground" by the consecutive plays during which a player has nominal possession of the ball will be substantially the same for all of the rings. Without such a balancing of the proportionate divisions of the respectively interchangeable rings or series of markings, any one conversant with such a game apparatus might soon learn to use the particular plate or ring offering the greater probability, thereby securing an unfair advantage over an opponent equally skilled in the actual game of foot-ball. For example, in the embodiment of the drawings, the peripheral percentage of four of the rings devoted to various results are as fol-

lows, whereby each of the said rings offers substantially the same probability of "ground gaining" according to the standard rules of foot-ball:

#1. Center play.		#2. End play.		#3. Fake play.		#4. Forward pass.	
Yards of gain.	% of ring.	Yards of gain.	% of ring.	Yards of gain.	% of ring.	Yards of gain.	% of ring.
40	1	45	1	50	1	60	1
20	2	25	2	30	2	40	2
10	4	10	4	20	3	25	3
5	6	8	5	10	4	10	9
4	8	6	8	5	16	5	15
3	12	4	15	3	24	.....	.....
2	18	2	30	.....	.....	.....	.....
1	24	.....	.....	.....	.....	.....	.....
0	10	0	15	0	25	Incomp.	40
− 1	4	− 2	6	− 1	7	− 2	10
− 4	1	− 4	4	− 5	3	.....	.....
Av. 3.0	90	Av. 3.5	90	Av. 4.0	85	Av. 4.5	80
− 1 L.	3	− 2 L.	3	− 2 L.	5	+ 5 I.	6
− 2 L.	2	+ 5 L.	2	− 5 L.	2	+ 3 I.	5
.....	.....	.....	.....	+ 5 L.	3	− 3 I.	4
− 5 P.	2	− 5 P.	1	− 5 P.	2	− 5 P.	1
−15 P.	1	−15 P.	1	−15 P.	1	−15 P.	1
+ 5 P.	1	+ 5 P.	2	+ 5 P.	1	+ 5 P.	2
+15 P.	1	+15 P.	1	+15 P.	1	+15 P.	1
	100		100		100		100

(NOTE: P, Penalty; I, Intercepted ball; L, Lost ball.)

To permit of a fairly accurate reading of the result of each proposed play after a rotation of the result-indicating disk without obscuring a portion of the marking on the disk, I preferably provide an indicator consisting of a fine wire 28 positioned immediately above the center of the said opening in the plate 13 and extending radially of the said post and disk. I also preferably provide a manually movable indicator 29 for showing the number of downs already undertaken by the side holding the ball and preferably imprint the plate 13 with the plan 30 representing a foot-ball field, the said field being laid off in yard lines, thereby enabling the player to insert a pin or other suitable indicator at the proper yard line to designate the position of the ball at the time that the play is started. I also preferably equip the game apparatus with two pair of score indicators 31 for indicating the respective scores of the two players.

In using the apparatus as above described, the first player choses the initial play and designates the same by inserting the peg 27 in one of the sockets 26, whereupon he rotates the disk 8 by means of the knob 6. When the disk comes to rest, the intersection of the indicator wire 28 with the ring alining with the said position of the peg 27 will indicate the result of the attempted play. Then the pin indicating the ball will be moved upon the field 30 and the play will proceed from one player to the other just as the ball passes from one side to the other in the actual game of foot-ball.

It will be obvious from the markings that attempts to kick goal from the field can only be made from points comparatively near to the goal, such as those corresponding to the rings 21, 22 and 23. It will also be obvious that in attempting such a goal kick from the field, the probability of actual success will increase with the nearness to the goal. I, therefore, preferably provide the said rings 21 to 23 inclusive with markings in which the probability of scoring a goal kick increases with the nearness to the goal. I also preferably provide the game apparatus of my invention with a suitable cover 31 as indicated in dotted lines in Fig. 2; however, I do not wish to be limited to this or other details of my game apparatus as herein shown and described, as the same might be varied in many ways without departing from the spirit of my invention. For example, the socket 6 is preferably of wood, but might be of fiber or other relatively hard material, while the annular element 9, which is rigid with respect to the said socket, might be of hard rubber or fiber instead of metal.

I claim as my invention:

1. In a game apparatus, in combination with a vertical post and a stationary indicator, a rotatable member equipped with a plurality of designations adapted to pass in proximity to the said indicator when the said member is rotated; the said member including a downwardly open socket having a bore larger than the diameter of the said post, the upper ends of the said bore and post coacting to form a pivotal support for the said rotatable member and permitting a tilting of the latter with respect to the post; and an annular guard element rigid with respect to the socket and having a bore smaller than the said bore of the socket; the bore of the annular element being normally out of engagement with said post, but adapted to engage therewith upon relative tilting of the rotatable member with respect to the post to limit the extent of the said tilting.

2. A foot-ball game apparatus including relatively rotatable dial and indicator members, the former having a plurality of relative progress-designating markings arranged in fields of interchangeably selectable concentric rings; each of said rings including fields of varying lengths with their respective lengths and the indications thereon so proportioned that the probabilities of total progress indicated as the result of plays by the said indicator during the successive rotations of the dial corresponding to the player's possession of the ball will be substantially the same regardless of the particular ring or rings selected for the said plays.

3. A game apparatus including relatively rotatable dial and indicator members, the former having a plurality of relative progress-designating markings arranged in concentric rings; a plate covering a portion of the said dial and presenting an edge overlapping all of the said concentric rings, and an auxiliary indicator movably positioned upon said plate adjacent to the said edge.

4. A game apparatus including relatively rotatable dial and indicator members, the former having a plurality of relative progress-designating markings arranged in concentric rings, a plate covering a portion of the said dial and presenting an edge overlapping all of the said concentric circles and equipped with socket formations alining respectively with the said rings, and an auxiliary indicator removably mounted in one of the said sockets.

5. A foot-ball game apparatus including relatively rotatable dial and indicator members, the former having a plurality of relative progress-designating markings arranged in concentric rings for indicating the result of attempted field goal kicks, the respective rings corresponding to various distances from the goal, the markings in the respective rings so proportioned that the probability of having a goal kick indicated by the said members after relative rotation thereof will vary inversely with the said distances from the goal.

6. A game apparatus including dial and indicator members one thereof stationary and the other thereof rotatable, a vertical post, a knob equipped with a downwardly open socket having a bore larger than the diameter of the said post and carrying the said rotatable member, the upper end of said bore affording a pivotal bearing for said knob, said bore enlarged at its lower end, and a washer seated in said enlarged portion of the bore of the knob and having its inner wall adapted to contact with said post to limit a tilting of said knob with respect thereto.

7. A game apparatus including a rotatable centrally perforated disk, a vertical post, a manually rotatable knob pivotally supported upon the upper end of said post and having a bore of larger diameter than said post, fastening means for securing the disk to the lower end of said knob, and a washer at the lower end of said knob concentric with said bore and having its opening of larger diameter than said bore and of smaller diameter than the perforation in said disk and adapted to prevent the mouth portion of said bore and the wall of the opening in the disk from bearing against said post during rotation of said disk.

8. A game apparatus including a support; a disk rotatably mounted thereon and imprinted with a plurality of relative progress-designating markings, a cover positioned over the said disk and equipped with an opening exposing a sector-shaped portion of the latter, and an indicator rigidly disposed across the said opening substantially radially of the said disk.

9. A foot-ball game apparatus including relatively rotatable dial and indicator members, the former having a plurality of relative progress-designating marks arranged in concentric rings for indicating the result of attempted field goal kicks, the respective rings corresponding to various distances from the goal; the goal-kick indicating markings in the respective rings being substantially in radial alinement, and the circumferential length of said markings increasing inversely with the indicated distances from the goal of the attempted goal kick.

10. A game apparatus including relatively rotatable dial and indicator members, the former having a plurality of relative progress-designating markings arranged in concentric rings, a plate covering a portion of the said dial and presenting an edge overlapping all of the said concentric circles and equipped with circle-designating fields alining respectively with the said rings, and an auxiliary indicator associated with the said plate and movable from one to another of the said fields.

11. A game apparatus including relatively rotatable dial and indicator members, the former having a plurality of relative progress-designating markings arranged in fields in interchangeably selectable concentric rings; each of said rings including fields of varying lengths with their respective lengths and the indications thereon so proportioned that the probabilities of total progress indicated as the result of plays by the said indicator during the successive rotations of the dial corresponding to one player's consecutive manipulations of the apparatus will be substantially the same regardless of the particular ring or rings selected for said plays.

In testimony whereof I have signed my name in presence of two subscribing witnesses.

WALTHER RASTER.

Witnesses:
M. M. BOYLE,
G. M. NEVILLE.