July 28, 1936. W. T. ANDERSON 2,049,284

FOOTBALL GAME

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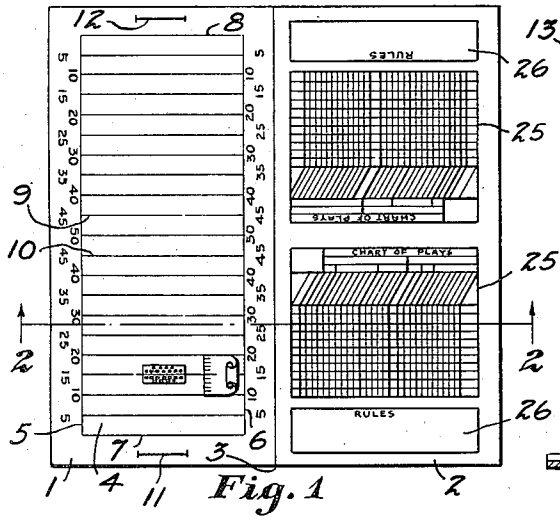


Fig. 1

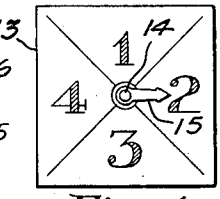


Fig. 4

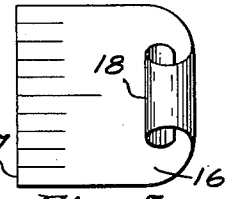


Fig. 5

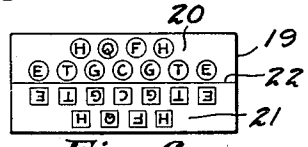


Fig. 6

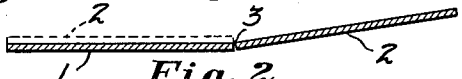


Fig. 2

SYMBOLS
S = Successfull Play
X = Unsuccessfull "
TD = Touchdown
INT = Intercepted Play
INC = Incomplete Play
G = Goal

CHART OF PLAYS

OFFENSIVE															DEFENSIVE														
			PASS		LINE PLAYS							KICK FOR GOAL FROM YD. LINE					PASS		LINE PLAYS								
DICE	KICKOFF OR PUNT	LATERAL OR BACKWARD	FORWARD	LEFT END	LEFT TACKLE	LEFT GUARD	CENTRE	RIGHT GUARD	RIGHT TACKLE	RIGHT END	POINT AFTER TOUCHDOWN	0 – 10 YARDS	11 – 20 YARDS	21 – 30 YARDS	31 – 40 YARDS	DICE	RETURN OF PUNT OR KICKOFF	LATERAL OR BACKWARD	FORWARD	LEFT END	LEFT TACKLE	LEFT GUARD	CENTRE	RIGHT GUARD	RIGHT TACKLE	RIGHT END	PUNTS AND KICKS EXCEPT KICKOFF
2	15	30	20	PENALTY 15 YARDS FOR HOLDING							S	X	S	X	X	2	40	INT 5	INT T.D.	30	10	8	5	4	5	6	
3	25	12	35	G	25	15	10	9	15	30	S	S	X	S	X	3	30	S	INT 20	5	20	7	8	6	12	25	BLOCKED
4	30	7	25	10	8	8	6	5	9	12	S	S	X	X	S	4	20	S	S	7	5	5	4	3	6	10	
5	35	3	10	8	6	5	4	4	7	8	X	X	S	S	X	5	12	INC.	INC.	6	4	3	2	2	5	6	
6	40	2	3	6	3	3	2	1	5	5	X	X	S	X	X	6	5	S	S	4	1	1	0	0	3	3	
7	45	5	5	5	5	2	1	3	4	4	S	X	S	S	X	7	0	INC.	INC.	3	4	0	0	1	2	1	
8	50	10	7	6	7	1	3	2	6	7	S	S	X	X	X	8	10	S	S	5	5	0	1	1	4	4	
9	55	15	15	7	10	4	5	6	8	9	S	S	X	X	X	9	15	S	INC.	6	8	2	3	3	6	4	
10	60	20	30	12	15	6	7	12	20	16	S	S	X	X	S	10	25	INT 10	INT 30	15	12	3	5	6	17	12	BLOCKED
11	70	25	40	PENALTY 5 YARDS OFFSIDE							X	S	X	X	X	11	35	S	S	7	6	4	2	5	10	5	
12	75	G	G	FUMBLE							S	X	X	X	X	12	T.D.	INT 20	INT 40	4	7	6	9	3	1	6	

Fig. 3

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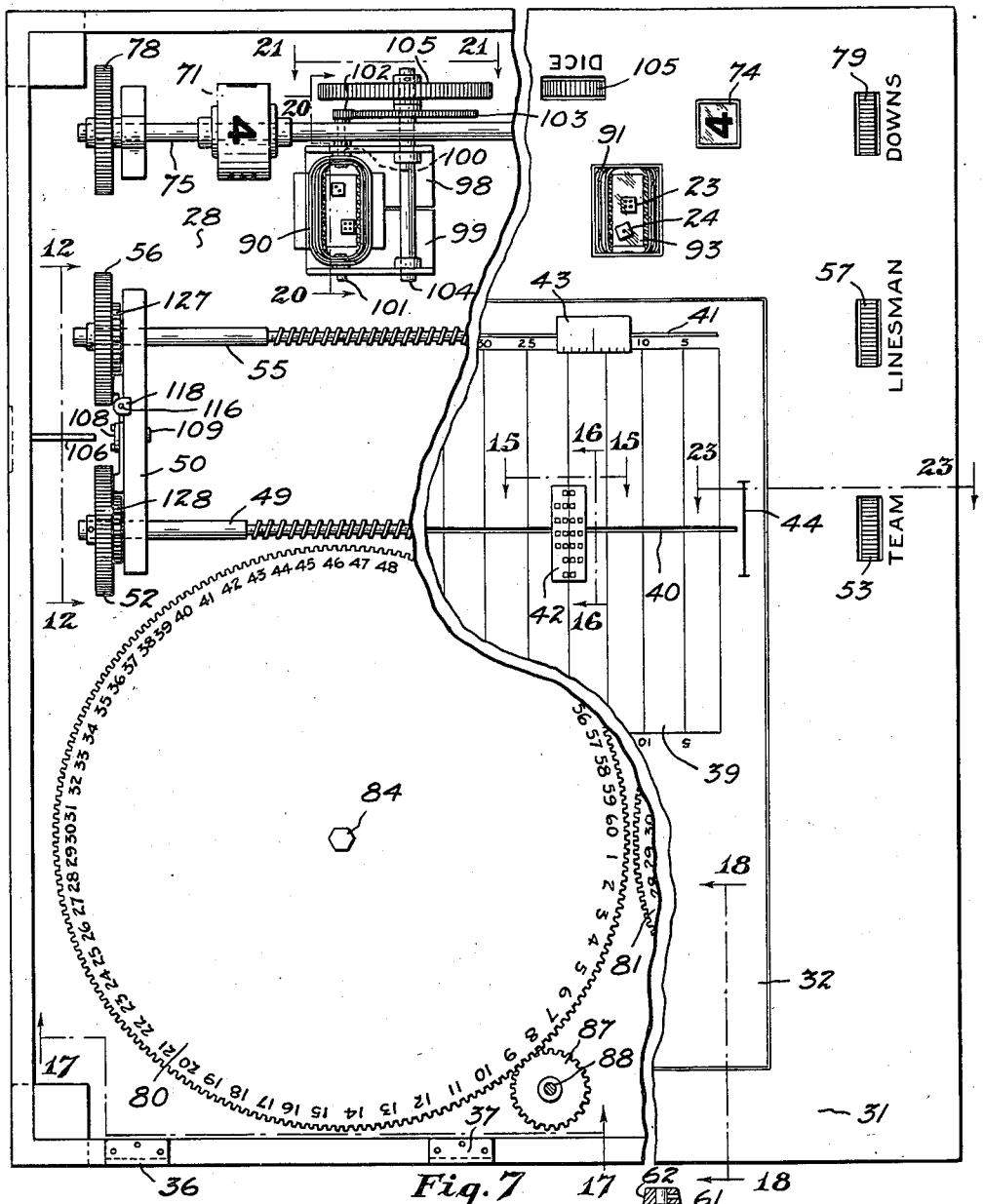


Fig. 7

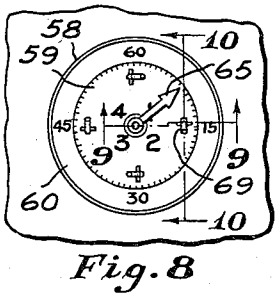


Fig. 8

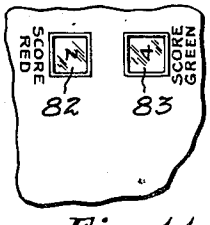


Fig. 11

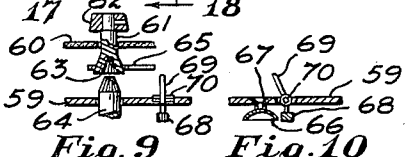


Fig. 9 Fig. 10

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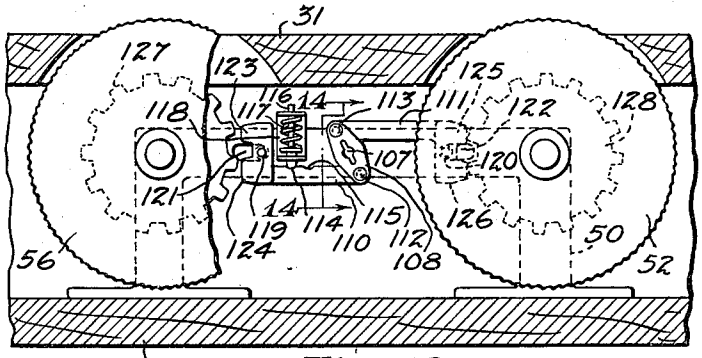


Fig. 12

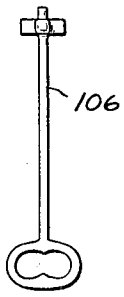


Fig. 13

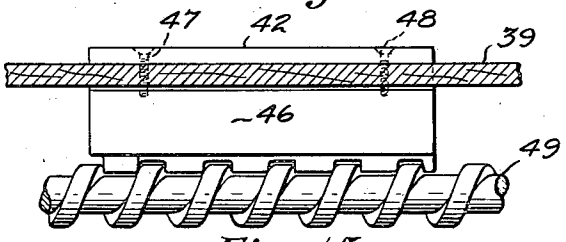


Fig. 15

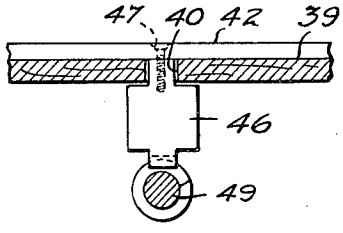


Fig. 16

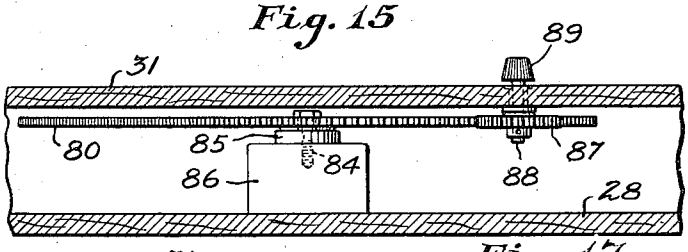


Fig. 17

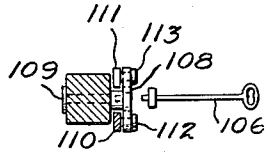


Fig. 14

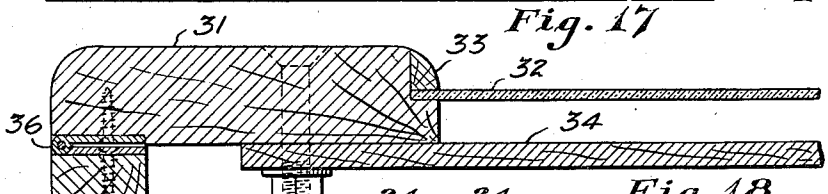


Fig. 18

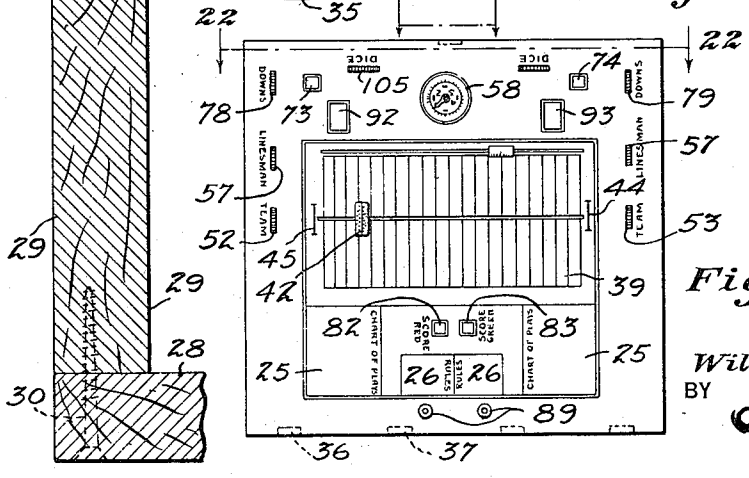


Fig. 19

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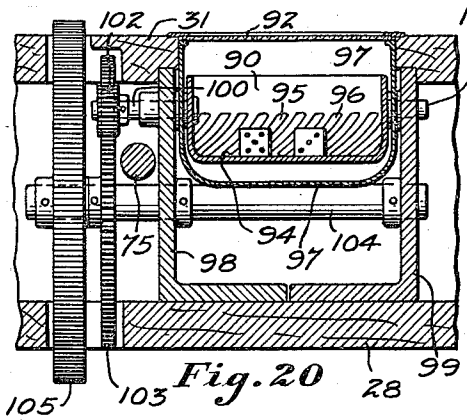


Fig. 20

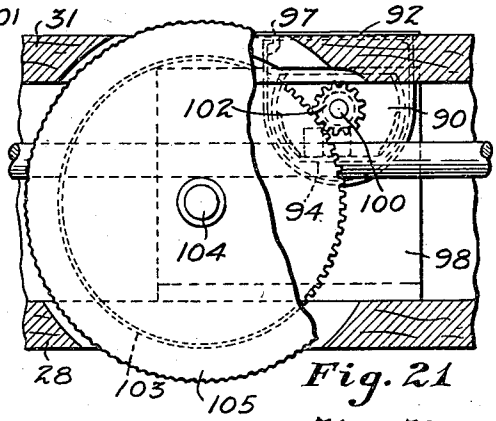


Fig. 21

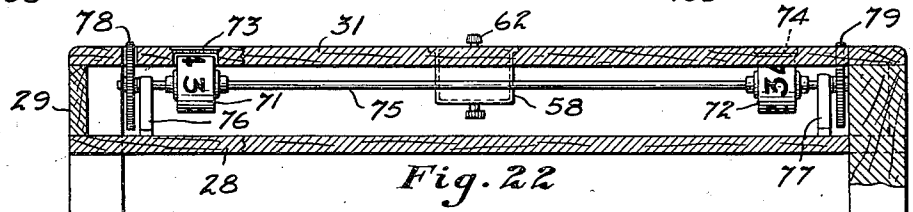


Fig. 22

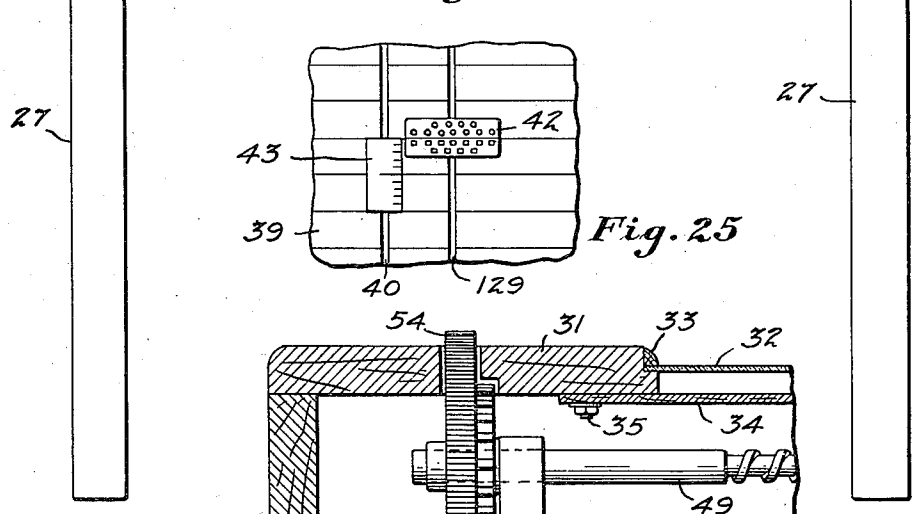


Fig. 25

Fig. 23

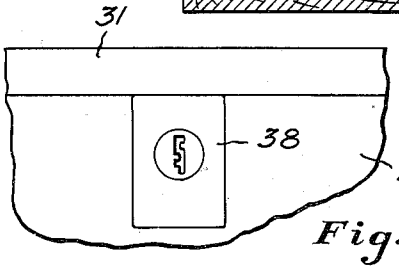


Fig. 24

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2,049,284

UNITED STATES PATENT OFFICE

2,049,284

FOOTBALL GAME

William T. Anderson, Montrose, Colo.

Application September 7, 1933, Serial No. 688,493

11 Claims. (Cl. 273—144)

This invention relates to games and more particularly to a football game for indoor use which is governed by the accepted rules for outdoor football and which has both instructive and entertaining qualities.

Football has long been recognized as one of the leading forms of outdoor sport and while entertaining indoor games have been produced previously embodying some features of the outdoor game of football such games have very largely lacked the capacity of imparting to the players a comprehensive knowledge of the game as it is played outdoors, have lacked the great driving spirit and thrill of victory so vitally characteristic of the outdoor game and have lacked the spirit of sportmanship and chief attraction of the outdoor game which characterizes the game forming the present invention by permitting the players to develop and to use their own ingenuity and to develop their own football sense thru acting as their own quarterback in selecting the best possible play for a given situation in advancing the ball toward the opponent's goal line.

The present invention consists of an adaptation of the actual game of outdoor football based on yardage values taken from a number of actual intercollegiate games collected according to classified plays, weighted against a chance means that follows a graduated law of probability and embodied into separate charts for offense and for defense and used in combination with representative pieces and equipment associated with the outdoor game.

An object of the present invention is to provide a game for indoor use which is as nearly as is practically feasible a true replica of the game of football as it is played out of doors.

Another object is to provide a football game that is to be played indoors and that is adapted to be played in accordance with and consistent with the same rules of football which control the playing of the outdoor game.

Another object is to provide a game which embodies the spirit and thought which has elevated the game of outdoor football to the rank of one of the major sports.

A further object is to provide a game that is adapted to be played indoors and that allows each player a wide latitude of both offense and defense plays to simulate the outdoor game and to choose from when playing on the offense as tho that player playing on the offense were the quarterback of his particular team.

Another object is to provide a substantial replica of the outdoor game of football thru which a young or an inexperienced player may develop a true football sense and judgment in his selection of the proper play to make in meeting a given situation.

A further object is to provide a replica of the game of football as it is played by the larger teams of the nation by means of which instruction may be given as to the proper method of playing the game on the actual outdoor field.

Another object is to provide a football game for indoor play that comprises a wide variety of plays set forth on a small chart that sets forth values of yardage gains that are made by a team playing on the offense and yardage values that such gains made by the offense are repelled by the defense which yardage values for both offense and defense have been computed from a large number of actual games played by college teams.

Another object is to provide a football game for indoor use wherein charts for the team playing on offense and for the team playing on defense provide a plurality of plays in separate classified form.

Another object is to provide an indoor football game that has separate yardage charts for offense and for defense, each of which may be used as a check on the other.

Another object is to provide a football game for indoor use that has playing charts that contain yardage values that vary in magnitude substantially inversely with a chance device that is subject to a definitely graduated law of probability.

A further object is to provide a football game for indoor use with which a large number of games may be played without any two games being alike.

Another object is to provide a game board for the indoor playing of football.

A further object is to provide an indoor football game board of improved form which is equipped with replicas of the usual trappings of the outdoor game of football.

Another object is to provide an improved form of mechanized game board for the indoor playing of football which may be used by a football coach for the purpose of illustrating and explaining to members of his team the strength and weakness of a particular play for a particular situation and also the succession of plays that is most nearly certain to lead his team to victory on the outdoor field of play and to be used in combination with a chart of plays.

In the accompanying drawings which illustrate

a suitable embodiment of the present invention:

Fig. 1 is a plan view of the preferred form of game board, and shows the team piece and the linesman piece positioned on the field of play;

Fig. 2 is an end view of the game board shown in Fig. 1, and shows the game board opened up for play in full lines, and in dotted outline, one side of the game board folded over on the other side of the game board about a flexible connecting hinge;

Fig. 3 is an enlarged plan view of the chart of plays shown in Fig. 1;

Fig. 4 is an enlarged plan view of the downs indicator;

Fig. 5 is an enlarged plan view of the linesman piece;

Fig. 6 is an enlarged plan view of the team piece;

Fig. 7 is a plan view of a modified form of mechanical game board which is partially cut away;

Fig. 8 is a plan view of the time recording mechanism;

Fig. 9 is an enlarged sectional view taken along the line 9—9 of Fig. 8, looking in the direction indicated by the arrows;

Fig. 10 is an enlarged sectional view taken along the line 10—10 of Fig. 8;

Fig. 11 is a plan view of the score windows thru which the team scores are visible;

Fig. 12 is an enlarged sectional view showing parts broken away and taken along the line 12—12 of Fig. 7;

Fig. 13 is an enlarged plan view of a key for operating the locking mechanism shown in Fig. 12;

Fig. 14 is a sectional view taken along the line 14—14 of Fig. 12 and shows the key shown in Fig. 13 in position for insertion in the locking mechanism;

Fig. 15 is an enlarged sectional view taken along the line 15—15 of Fig. 7;

Fig. 16 is an enlarged sectional view taken along the line 16—16 of Fig. 7;

Fig. 17 is a sectional view taken along the line 17—17 of Fig. 7;

Fig. 18 is an enlarged sectional view taken along the line 18—18 of Fig. 7;

Fig. 19 is a plan view in diminished scale of the mechanical game board shown in Fig. 7;

Fig. 20 is an enlarged sectional view taken along the line 20—20 of Fig. 7;

Fig. 21 is an enlarged sectional view taken along the line 21—21 of Fig. 7, with parts broken away;

Fig. 22 is an enlarged sectional view, with the dice tumbling mechanism omitted for purposes of clearness, taken along the line 22—22 of Fig. 19;

Fig. 23 is an enlarged sectional view taken along the line 23—23 of Fig. 7;

Fig. 24 is an enlarged elevational view taken from the line 24—24 of Fig. 19;

Fig. 25 is a plan view showing a modified positioning of the linesman piece with respect to the team piece.

The indoor game of football that embodies the present invention is preferably played on the game board and with the trappings which are shown in Figs. 1–6, inclusive, of the drawings, and with two pairs of dice, such as those shown in Fig. 7.

The preferred form of game board is made of cardboard, plywood, or the like, and consists of two substantially rectangular sides 1 and 2, which are joined along adjacent lateral edges by a flexible hinge 3. When the game board is closed the sides 1 and 2 substantially overlie each other, as shown in opened position in full lines and in closed position by side 2 being shown in dotted outline in Fig. 2.

A field of play 4 is preferably positioned on the left hand side of the game board and is dimensioned and marked substantially proportionate with an outdoor football field. Side lines 5 and 6 and goal lines 7 and 8 bound the field of play. A plurality of 5 yd. lines, of which lines 9 and 10, may be taken as illustrations, are positioned between and are substantially parallel to, the goal lines 7 and 8. The 5 yd. lines are preferably numbered along the side lines as shown, in order to facilitate the locating of any given position on the field of play. Pairs of goal posts 11 and 12 are positioned at opposite ends of the field of play and are preferably of contrasting colors, as red for one pair of goal posts and green for the other pair.

A suitable downs indicator 13, such as that shown in Fig. 4, is provided for the recording of the four downs allowed the team playing on the offense during which the ball must be advanced ten yards or its possession lost to the opposing team. The downs indicator 13 preferably consists of a cardboard base bearing the numerals 1 to 4, inclusive, which are disposed in a consecutive numerical order around its center where a pin 14 supports a freely rotatable hand 15.

A linesman piece 16, such as that shown in Fig. 5, is provided for use on the field of play for indicating the particular ten yards which are to be made in any one set of four downs and also for establishing positions between the five yard lines on the field of play. The linesman piece 16 has a measuring edge 17 which is graduated by lines into one yard spaces. An upwardly turned thumb grip 18 is provided for handling the piece and positioning it on the field of play.

A freely movable team piece 19, as shown in Fig. 6 of the drawings, is provided for use on the field of play for indicating the position of opposing teams. The team piece 19, preferably carries illustrations of opposing teams 20 and 21, drawn up in scrimmage play on either side of a middle line 22, which is used as an index for locating the position of the piece on the field of play. The illustrations of the team members are preferably colored to correspond with the colors of their respective pairs of goal posts, and may or may not bear letters to signify their respective positions on the teams, as desired.

Preferably four dice are used in pairs for the purpose of introducing the element of chance in the game. The dice 23 and 24, which are shown in Fig. 7, may be taken as illustrative and are preferably colored in pairs to conform with the colors of the respective pairs of goal posts. Other forms of numerical chance controlled devices which are adapted to follow a definitely graduated law of probability, may be substituted for the pairs of dice, if desired.

The right hand side of the gameboard preferably carries duplicate charts of play 25 and rules 26, which are easily readable from opposite ends of the gameboard. The dice readings are used in conjunction with the chart of plays to indicate the degree of success or failure of a particular play.

The law of probability which is followed by two dice freely thrown, provides twenty one possible scores or number combinations, omitting duplicates, and thirty six total chances in which any one of such number combinations may occur. The graduations of the law of probability

which is characteristic of two dice freely thrown will be apparent from the following table:

Out of thirty six total chances there are respectively:

1 2 3 4 5 6 5 4 3 2 1 chances that the readings will be 2 3 4 5 6 7 8 9 10 11 12, on the dice.

In compliance with this law of probability, there are six times the probability that the number 7 will be thrown that there is that either the number 2 or 12 will be thrown; the same chance that a 5 will be thrown that there is that a 9 will be thrown; etc. The yardage values appearing in the chart of plays are means of classified plays in actual games weighted against this law of probability.

The chart of plays is divided into a chart for the use of the team playing on the offense and having possession of the ball and entitled "Offensive", and a chart for the use of the team playing on the defense and not having possession of the ball and entitled "Defensive". The purpose of this division is to distinguish between the yardages gained and lost by the opposing teams.

The yardage values listed in the chart of plays for both the offense and for the defense are based on the charting of a large number of classified plays from actual outdoor games balanced against the graduated law of probability followed by a pair of dice, as described above. Relative values of each play thru the line, passes, kicks, etc., were studied from observation of the actual outdoor game and have been adapted to the present indoor game in order to make the values set forth in the chart as near as possible to the actual values for corresponding plays in the outdoor game of football. The chart presents the average yardages which have been gained or lost thru the various plays made in the actual outdoor games which have been charted, weighted against the frequence of the occurrence of a given reading on a pair of dice freely thrown.

The chart of plays gives eighty eight variations of play thru each of seven line positions, or six hundred and sixteen variations of line plays on a simple chart of eleven chances. Combination plays may also be made, if desired, such as a run around end accompanied by a lateral pass, by shaking the dice separately for the yardage made on each play both by the team playing on the offense and by the team playing on the defense.

In both the chart for the offense and that for the defense, it will be noted in general for all columns, except that for the offense kick-off column and the defense line play values for dice rows **2**, **11** and **12**, that the yardage values for plays tend to be smaller with increase in probability, that is, the yardage values nearer the dice readings of 7 are smaller than the yardage values nearer the dice readings of 2 or 12.

In the offense column headed "Kickoff or Punt", the most probable distance kicked, listed in dice row **7**, is the average kick of forty five yards. This distance is taken as the base or most frequently occurring distance for the kick-off. A rarely occuring short kick, such as a kick of fifteen yards is positioned on the dice row **2**. A rarely occurring long kick, such as a kick of seventy-five yards is placed on the dice row **12** The yardage graduations decrease more or less consistently from the mean value of forty five yards in one direction and increase in the other direction, to the ends of the column.

The defense line play values for dice rows **2**, **11**, and **12** are exceptions to the general rule because of the necessity of balancing these particular plays against the penalties and fumbles shown on the offense side of the chart for the same dice readings. This is in rough conformity with the actual outdoor football games charted and prevents the present indoor game from being a free scoring affair.

The yardage values for the offense side of the chart are in general somewhat larger than the yardage values for the defense side of the chart. This provision is also in conformity with the actual outdoor games charted and provides for a more or less consistent gain for the team playing on the offense. A fumble and recovery is charted to occur once in thirty six chances, which roughly approaches the actual occurrence of this play in the actual outdoor game and for the same reason penalties are charted to occur three times in thirty six chances.

Forward passes were, in the games charted, usually incompleted, as set forth in the chart for the defense. Successful forward passes were found to be somewhat better ground gainers than lateral or backward passes. As shown under the heading "Symbols" in Fig. 3, INT signifies intercepted play and INC signifies an incomplete play. An interception of the ball transfers the possession of the ball to the intercepting team. An incompleted pass indicates no yardage gain but retention of the ball by the passing team.

Plays thru various parts of the line are given different values in conformity with the actual outdoor game. Plays thru center are usually certain of a small gain but a gain that is not sufficient to consistently make a ten yard gain in four tries. Plays off tackle, when successful, are better ground gainers than plays thru center but they are somewhat more hazardous. End runs, when successful, give substantial gains, but when unsuccessful frequently cause losses of from five to fifteen yards.

The preferred procedure by means of which the values of the various line plays for both the team playing on the offense and for the team playing on the defense are adapted to the graduated law of probability of a pair of dice is that the products of dice readings times yardage for the separate dice rows are separately totaled for each column, these totals are divided by the number of dice readings for that column and the differences between the averages for the same play for the offense and for the defense so obtained are maintained in a graduated order, as:

Ends:			av.	diff.				av.	diff.
left	O	306	33	17	right	O	296	37	17
	D	235	21			D	219	20	
Tackle:									
left	O	263	33	13	right	O	256	32	13
	D	222	20			D	210	19	
Guard:									
left	O	140	17	10	right	O	142	18	10
	D	81	7			D	87	8	
Center:									
left	O	126	16	8					
	D	86	8						

The preferred differences are: center play 8, guard 10, tackle 13, and end 17.

It will be noted in the preferred differences that center is taken as a base to which 2 are added for guard plays, 3 for tackle, and 4 for end plays.

In kicks for goal, as shown in Fig. 3, under the heading "Symbols", the letter "S" is used to signify a successful kick and the letter "X" to signify an unsuccessful kick. Where a kick is blocked no yardage is gained and possession of the ball

passes to the blocking team when the kick is blocked on the fourth down. When the kick is blocked on downs one to three, inclusive, the players roll their dice and the team securing the higher dice reading is the team which recovers the ball. Kicks for goal are less likely to be successful when they are made from positions a greater distance away from the goal posts and the chart for the offense is so graduated.

The rules of play direct the players in the use of the game board and the game pieces and consist of a brief résumé of the following rules. The rules of play may appear on the game board or on a separate sheet of paper, as desired.

Rules of play

The game lasts one hour and is divided into four fifteen minute quarters.

The team playing on the offense is the team possessing the ball.

Spalding's "Official Football Rules" for the current year is to be followed thruout.

1. Players roll dice, higher number takes kick-off and choice of goals, and opens play as team playing on the offense.

2. Player on offense places team piece on his 40 yd. line, calls kick-off, rolls his dice, and consults chart headed "Offensive" for yardage his team kicks ball into defense territory.

3. Player on defense rolls his dice, and consults the chart headed "Defensive" for the yardage his team returns the ball received on the kick-off.

4. Player for the team holding the ball places the middle line of the team piece on the yard line indicated by the yardage of the "Offensive" less the yardage of the "Defensive", places the end of the linesman piece on the same yard line to designate the ten yards necessary to make in four downs to retain possession of the ball, and places the downs indicator at one.

5. Player for the team holding the ball acts as his team's quarterback and calls the particular play that he feels is most appropriate, rolls his dice, and consults the chart headed "Offensive" under the column headed by the play that he has selected and in the row that is indicated by his dice throw and notes the yardage indicated.

6. Player on the defense rolls his dice, consults the chart headed "Defensive" in the column of the play called by the player on the offense and in the row indicated by the dice throw of the defense player, deducts his yardage from the offense yardage, moves the team piece the yardage so determined, and moves the downs indicator to read two.

7. The play continues to four downs. If the team possessing the ball has made or exceeded the ten yards indicated by the yardsman piece before the end of the fourth down, the position of the yardsman piece is changed to indicate the next ten yards gain that team must make in the next four downs to retain possession of the ball, and that team continues as offense player. Should any ten yard gain not be made in four downs by the team playing on the offense, the possession of the ball goes to the opposing team which thereby becomes the team playing on the offense.

8. Scores: touchdown—6 points—team piece crosses the defense goal line; try-for-point after touchdown—1 point where successful; field goal—3 points—team piece crosses the defense goal line on a successful kick; and safety—2 points for opponents—team piece crosses the offense goal line.

9. Specific plays:

A kick-off follows each score made—the team having been scored on has the option of kicking or receiving.

Penalty—occurs when the offense calls a line play and then rolls 2 or 11 with his dice. Both players then roll their respective dice and the penalty is suffered by the team rolling the lower number.

Fumble—occurs when the offense calls a line play and rolls 11 with his dice. Both players then roll their respective dice and the player rolling the higher number recovers the fumble and thereby gains possession of the ball and becomes the team playing on the offense.

Intercepted pass—the yardage that defense intercepts and returns a pass made by the offense is deducted from the listed yardage that offense advances the ball.

Incomplete pass—where the defense chart indicates an incomplete pass the offense retains possession of the ball but fails to gain the yardage or goal indicated on the offense chart.

Blocked kick—kick fails and possession of the ball goes to the defense team on the fourth down. When a kick is blocked on downs one to three, inclusive, the players roll their dice and the team having the higher dice reading is the team which recovers the ball.

Unsuccessful kick for field goal—defense does not roll dice since kick failed, the offense makes no yardage gain and the possession of the ball goes to the defense team on their 20 yd. line.

A modified form of game board of the mechanized type for use in the playing of the game of indoor football which is disclosed herein, is shown in Figs. 7–25, inclusive, of the drawings.

The mechanized game board is preferably supported by a plurality of legs, of which the leg **27**, shown in Fig. 22, may be taken as representative, and comprises a bottom **28**, which is secured to four side walls such as the side wall **29**, by screws **30**, as shown in Fig. 18, and a top comprising an outer frame **31**, in which a glass plate **32**, is mounted by quarter round strips **33**, and to the under side of which frame a field carrying plate **34**, which is formed of thin plywood or sheet metal, is secured by bolts **35**.

The top of the mechanized form of game board is preferably connected to one side wall by a plurality of hinges, such as hinges **36** and **37**, for the purpose of permitting access to the interior of the game board. A lock **38**, as shown in Fig. 24, may be provided, if desired, for locking the top down.

A field of play **39**, shown in Fig. 19, which substantially duplicates the previously described field of play **4**, is depicted on the field carrying plate **34**. Slots **40** and **41**, shown in Fig. 7, are formed longitudinally of the field of play thru the plate **34**, for the accommodation respectively, of a team piece **42** and a linesman piece **43**, both of which are designed to be freely slidable along their respective grooves. The slot **40** preferably extends longitudinally of the middle of the field of play and the slot **41** along the side line as shown. As in the previously described field of play **4**, pairs of distinctively colored goal posts **44** and **45**, as shown in Fig. 19, are positioned at opposite ends of the field of play.

The team piece **42** preferably bears insignia of opposing teams as appearing on the team piece **19**, and is secured to an underlying portion **46**, as shown in Figs. 15 and 16, by bolts **47** and **48**. The underlying portion **46** is preferably threaded on its lower side for engagement with the spirally threaded shaft **49**, the opposite ends of which are journaled in the bearing pieces **50** and **51**.

Hand wheels 52 and 53, shown in Figs. 7 and 19, which are rigidly secured to opposite ends of the shaft 49, have peripheral portions which project thru slots formed in the frame 31 for access from above the game board altho access to the hand wheels may be provided in some other manner, if desired. A line 54, as shown in Fig. 23, of color to contrast with the color of the hand wheels may be formed transversely of the periphery thereof, if desired, at spaced intervals which conform to the movement of the team piece a given distance, such as one yard, on the field of play.

The linesman piece 43 has a surface portion which is proportionate to ten yards in length on the scale of the field of play 39 and the surface of the linesman piece 43 is graduated in one yard lengths, as shown. The linesman piece is geared to a spirally threaded shaft 55 in the same manner as is shown in Figs. 15 and 16 for the team piece 42. The ends of the shaft 55 are journaled in the bearing pieces 50 and 51, and hand wheels 56 and 57 are rigidly secured thereto for operation of the shaft 55. The hand wheels 56 and 57 have peripheral portions which extend thru suitable apertures formed in the frame 31 for providing access thereto from above the game board. Transverse lines indicating yardage movement of the linesman piece 43 may also appear on the peripheries of the hand wheels 56 and 57, if desired.

A chart of plays 25 and rules 26 are positioned on the field carrying plate 34 beside the field of play 39 and on either end of the game board, as shown in Fig. 19, in such a manner as to be easily readable from either end of the game board.

A clock 58 is mounted in the frame 31, as shown in Figs. 8 and 19, and serves to indicate the periods of play. The dial 59 of the clock, is preferably divided into quadrants of fifteen minutes each altho, if desired, the time periods of play may be of other duration. In its preferred construction the glass 60 of the clock 58 is apertured at its center for the accommodation of a short shaft 61 on the upper end of which a hand knob 62 is rigidly secured. An internally milled, frusto-conical aperture 63 is formed in the lower end of the shaft 61. The upper end of the clock shaft 64, which is rotated by the clock mechanism, is also milled and of frusto-conical shape and designed for seating within the aperture 63 formed in the shaft 61. The clock hand 65 is rigidly mounted on the shaft 61. Free access to the hand knob 62 makes it possible to lift the clock hand 65 from any position and to place it at zero on the clock dial 59 at the beginning of any game.

A sound mechanism, associated with the clock 58, is preferably provided for announcing the end of each quarter and the end of the game. The preferred form of such sound mechanism is the bell 66 which is mounted on the under side of the clock dial 59 by means of the rivet 67 and is sounded by the impact of the small weight 68 which is carried at the lower end of the trip 69. The trip 69 is pivoted on the pin 70, the ends of which seat in suitable bearing indentations formed in the dial 59 which is apertured for the reception of the trip 69. The upper end of the trip 69 is preferably inclined and is of sufficient length for making engagement with the clock hand 65. The trip and bell arrangement is preferably duplicated at each quadrant of the clock dial, as shown in Fig. 8 of the drawings.

A pair of downs indicator drums 71 and 72, shown in Figs. 7 and 22 of the drawings, carry numerals 1 to 4, inclusive, on their peripheries, which numerals are consecutively visible thru suitable windows 73 and 74 formed thru the frame 31. The downs indicator drums 71 and 72 are rigidly mounted on a shaft 75 which is journaled adjacent either end in the bearings 76 and 77. Hand wheels 78 and 79 are rigidly mounted on the ends of the shaft 75 and a portion of the peripheries of the hand wheels 78 and 79 preferably project thru suitable apertures in the frame 31.

A pair of score wheels 80 and 81, shown in Figs. 7 and 17, are positioned beneath and are substantially parallel to the field carrying plate 34, and are toothed along their peripheries. Each score wheel carries score numerals positioned inwardly of its periphery and readable thru suitably positioned windows 82 and 83 which are cut thru the field carrying plate 34. The score numerals are preferably colored to conform with the goal posts and with the teams to which the score applies. Each score wheel is mounted in freely rotative relation about a bolt 84 which is positioned at the center of the wheel. A bearing 85, thru which the bolt 84 passes, serves to support the score wheel during its rotation in a substantially single plane. The bolt 84 and the bearing 85 are mounted in a block 86 which is rigidly secured to the bottom 28 of the game board.

Each score wheel is driven by a peripherally toothed gear 87, the teeth of which engage the peripheral teeth of the score wheel. The gear 87 is rigidly mounted on a shaft 88 which is journaled thru the frame 31 and is operated by a hand knob 89 which is rigidly mounted on the upper end of the shaft 88.

Dice tumblers 90 and 91, shown in Figs. 7, 20 and 21, are provided for tossing the dice 23 and 24 in pairs. The dice preferably conform in color to the color of the pair of goal posts and the team with which they are used. Windows 92 and 93 are formed in the frame 31 for the observation of the dice from above the game board. The dice tumbler construction is substantially duplicated but inverted and the description of one will apply to both.

Each dice tumbler has a flat bottom portion 94 and substantially cylindrical side portions in which a plurality of inwardly pressed ribs, such as the ribs 95 and 96, are formed for catching the edges of the dice during the rotation of the tumbler. Each dice tumbler is enclosed in a shell 97 which has a substantially cylindrical bottom portion and upstanding side portions and is rigidly mounted against movement between the bearings 98 and 99 in which shafts 100 and 101, which are rigidly secured to opposite ends of the dice tumbler 90, are journaled. The shell 97 prevents loss of the dice during the rotation of the dice tumbler. A small gear 102 is rigidly secured to one end of the shaft 100 and engages the teeth of a peripherally toothed large gear 103 beside the hand wheel 105, both of which are rigidly mounted on the shaft 104. A portion of the periphery of the hand wheel 105 projects thru a suitable aperture formed in the frame 31 for access thereto from above the game board. The shaft 104 is journaled in the bearings 98 and 99.

The team piece 42 and the linesman piece 43 may be locked against operation, if desired, as when the game is not in use or when used in conjunction with a coin release, by the form of

lock which is shown in Figs. 7, 12 and 14 of the drawings.

The key 106, shown in Figs. 13 and 14 of the drawings, forms a suitable means of operating the lock shown. A key hole 107 for the reception of the key 106, is formed in the pivoted center bar 108 of the lock. The center bar 108 is pivotally mounted on the bearing piece 50 by the headed pin 109, and the ends of the center bar 108 are pivotally secured to the thrust bars 110 and 111 by the pins 112 and 113. Depressions 114 and 115, which are formed in the thrust bar 110, are positioned for the entrance of the lower end of the detent rod 116 which is maintained in thrust by the spring 117. The spring 117 is positioned around the rod 116 within the housing 118. The housing 118 is preferably partially countersunk within the bearing piece 50 and secured thereto by suitable means as by spot welding. The thrust bars 110 and 111 are held against the side of the bearing piece 50 by the headed pins 119 and 120, respectively, which form freely sliding engagement within the undercut grooves 121 and 122, respectively, formed in the side of the bearing piece 50. End teeth 123 and 124 on the thrust bar 110, and teeth 125 and 126 on the thrust bar 111, are adapted for engagement with the peripheral teeth on the gears 127 and 128 which are rigidly mounted on the shafts 49 and 55 respectively, adjacent to and concentric with the hand wheels 52 and 56 respectively. The absence of substantial incline on the contacting faces of the engaging teeth of the thrust bars and the gears, prevents the release of the locking mechanism when in secured position by the use of the hand wheels 52 and 56. A similar locking mechanism may be mounted on the hand wheels 53 and 57, at the opposite side of the game board, if desired. The locking mechanism may also be adapted for use in a coin operated game board if desired.

A modified positioning of the linesman piece 43, with respect to the team piece 42, is shown in Fig. 25. The linesman piece 43 is positioned substantially adjacent to the team piece 42 in the slot 129 for purposes of greater ease and accuracy in the establishing of successive positions of the team piece 42 on the field of play during the playing of the game.

It is to be understood that the particular embodiment of the invention that is shown and described herein is presented for purposes of illustration and explanation and that various modifications in the game, in the game board on which the game is played, in the pieces used in the game, and in the means for introducing the element of chance in the game, may be made without departing from the invention as defined in the appended claims.

What I claim is:

1. A game board, comprising a shell rigidly mounted therein, a substantially semi-cylindrical bottom portion of said shell for retaining articles that may be loosely positioned therein, a continuously revolvable tumbler rotatably mounted in said shell, tumbler rotating means having an operating part extending to the exterior of said game board, and a substantially cylindrical side portion of said tumbler of transverse curvature substantially concentric with the transverse curvature of the lower portion of the tumbler enclosing shell and having an edge portion adapted for scooping articles that may be positioned loosely in said semi-cylindrical bottom portion of said shell into said tumbler on the rotation thereof and simultaneously imparting a spinning motion to said scooped articles.

2. A game board, comprising a continuously revolvable dice tumbler rotatably mounted therein, a shell substantially enclosing said dice tumbler, means for continuously rotating said dice tumbler, a hand wheel for manually operating said dice tumbler rotating means and having a portion projecting outwardly of said game board, a gear train interposed between said hand wheel and said dice tumbler rotating means, a substantially semi-cylindrical portion of said dice tumbler coaxial with said semi-cylindrical portion of said shell for imparting a spinning motion to and for loosely retaining dice that may be removably positioned therein, a plurality of dice engaging ribs disposed in said cylindrical portion of said dice tumbler and serving to impart motion to said dice both rotatably with the motion of said dice tumbler and longitudinally thereof, a flat bottom portion of said dice tumbler serving as a rest for said dice when in readable position, and transparent window means disposed in said game board and thru which said dice are visible at some position of said dice tumbler.

3. A game board, comprising a window, a rotatable and continuously revolvable dice tumbler positioned within said game board and visible thru said window, a dice engaging rib projecting upwardly from the surface of said dice tumbler and serving to impart both rotating spinning motion and motion longitudinally of said dice tumbler to articles freely positioned therein, a shaft to which said dice tumbler is rigidly joined, and continuously rotatable shaft operating means accessible from without said game board.

4. A game board, comprising a transparent window, a continuously rotatable dice tumbler disposed inwardly of said game board and visible thru said window and having an edge portion for imparting a spinning motion to dice impacted thereby, a dice engaging rib projecting upwardly from the surface of a portion of said dice tumbler and adapted for imparting spinning motion to solid articles loosely disposed within said dice tumbler both rotatably with the motion of said dice tumbler and longitudinally thereof, a shell disposed outwardly of said dice tumbler and in rigid relation with said game board, and dice tumbler continuously operating means accessible from without said game board.

5. A game board, comprising a window, a continuously rotatable dice tumbler visible thru said window, a substantially cylindrical side portion of said dice tumbler having a dice engaging edge portion that imparts a spinning motion to dice impacted thereby, a substantially flat dice displaying bottom portion of said dice tumbler, a shell disposed outwardly of said dice tumbler in co-axial relation with said side portion thereof and in rigid relation with said game board, and dice tumbler operating means accessible from without said game board.

6. A game board, comprising a frame portion and a bottom portion, a window positioned in said frame portion, a bearing interposed between said game board frame portion and said game board bottom portion in rigid relation therewith, a shell having a substantially semi-cylindrical lower portion positioned beneath said window in rigid relation with said game board frame portion, a device tumbler rotatably positioned within said shell and having side portions that are substantially co-axial with said semi-cylindrical lower

portion of said shell, a dice tumbler edge portion adapted for impacting dice and imparting a spinning motion thereto, a plurality of dice engaging ribs projecting upwardly from a portion of said dice tumbler and adapted for imparting a spinning motion to dice loosely positioned within said dice tumbler both rotatably and longitudinally thereof, and means accessible from outside of said game board for continuously rotating said dice tumbler.

7. A game board, comprising a window, a rotatable dice tumbler having a portion that is visible thru said window, a side portion of said dice tumbler of curved section and terminating in an edge portion that is adapted for imparting a spinning motion to dice impacted thereby, a substantially flat bottom portion of said dice tumbler and continuing from said dice tumbler side portion, a rib projecting upwardly from a portion of said dice tumbler side portion for imparting a spinning motion to dice impacted thereby both rotatably with said dice tumbler and longitudinally thereof, a shell mounted in rigid relation with said game board and disposed outwardly of said dice tumbler and having a portion substantially co-axial therewith, a substantially cylindrical bottom portion of said shell adapted for retaining articles that may be loosely disposed therein, an upstanding side wall portion of said shell continuing from said shell bottom portion and forming a part thereof, and dice tumbler continuously rotatable operating means accessible from without said game board.

8. A game board, comprising a window, a continuously rotatable dice tumbler visible thru said window and having a side wall of curved section, a dice engaging edge portion of said dice tumbler that imparts a spinning motion to dice impacted thereby, a shell disposed outwardly of said dice tumbler and mounted rigidly with respect to said game board and having a substantially semi-cylindrical lower portion that is substantially co-axial with said side wall of said dice tumbler, a shaft for operating said dice tumbler, bearing means mounted rigidly with respect to said game board and in which said shaft is journalled, and a hand wheel adapted for continuously operating said shaft and having a portion accessible from without said game board.

9. A game board, comprising a window, a continuously rotatable dice tumbler visible thru said window and having a side wall of curved section, a dice engaging edge portion of said dice tumbler side wall that imparts a spinning motion to dice impacted thereby, a shell disposed outwardly of said dice tumbler and mounted rigidly with respect to said game board and having a substantially semi-cylindrical lower portion that is substantially co-axial with the curved side wall of said dice tumbler, a shaft for operating said dice tumbler, bearing means mounted rigidly with respect to said game board and in which said shaft is journalled, a hand wheel adapted for continuously operating said shaft and having a peripheral surface accessible from without said game board, and indicia disposed along the peripheral surface of said hand wheel.

10. A dice tumbling device, comprising a dice tumbler housing shell having a semi-cylindrical lower portion for retaining dice positioned therein, a dice tumbler disposed within said shell and having a side portion of curved section that is substantially co-axial with said lower portion of said shell, a dice impacting edge portion of said dice tumbler side portion for imparting a spinning motion to dice forceably contacted thereby, and means for continuously rotating said dice tumbler within said shell.

11. A game board, comprising a window, a rotatable continuously revolvable dice tumbler positioned within said game board and visible thru said window, a curved side wall forming a part of said dice tumbler, a shell enclosing said dice tumbler and having a substantially semi-cylindrical lower portion with which said dice tumbler curved side wall is substantially concentric, a dice engaging rib projecting upwardly from the surface of said dice tumbler curved side wall and extending substantially diagonally thereof and adapted for imparting a spinning motion to solid articles loosely positioned within said dice tumbler both rotatably with the motion of said dice tumbler and longitudinally thereof, a shaft rigidly joined with said dice tumbler, a bearing thru which said shaft is journalled, and continuously rotatable shaft operating means accessible from without said game board.

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