

Feb. 5, 1929.

1,701,002

V. C. HARKRADER

FOOTBALL GAME

Filed March 30, 1927

24 Sheets-Sheet 1

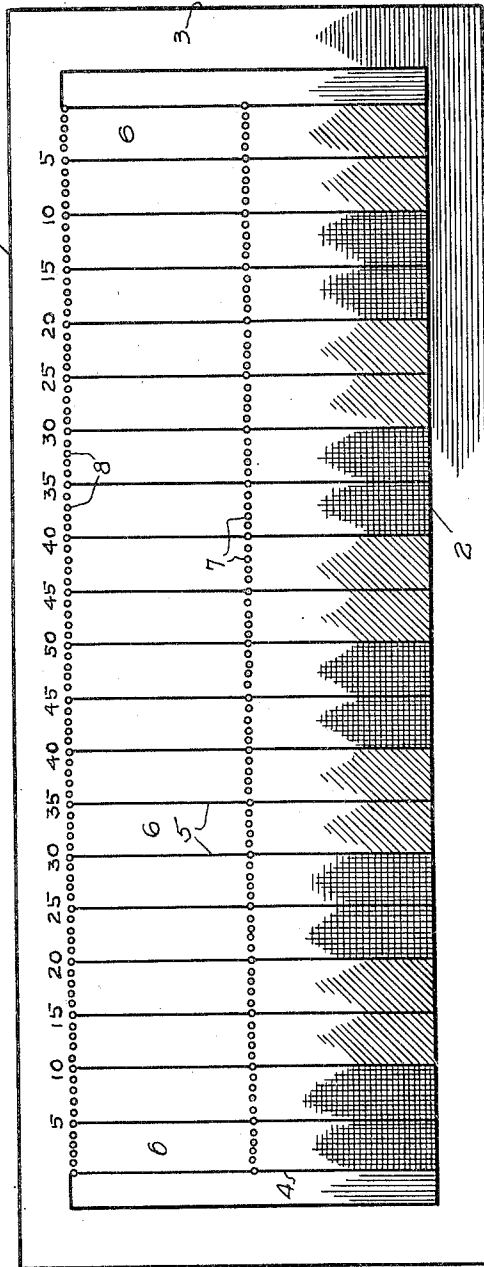


FIG. 1

INVENTOR
Virgil C. Harkrader
PER *Lefft and Lefft*
ATTORNEYS

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V. C. HARKRADER

FOOTBALL GAME

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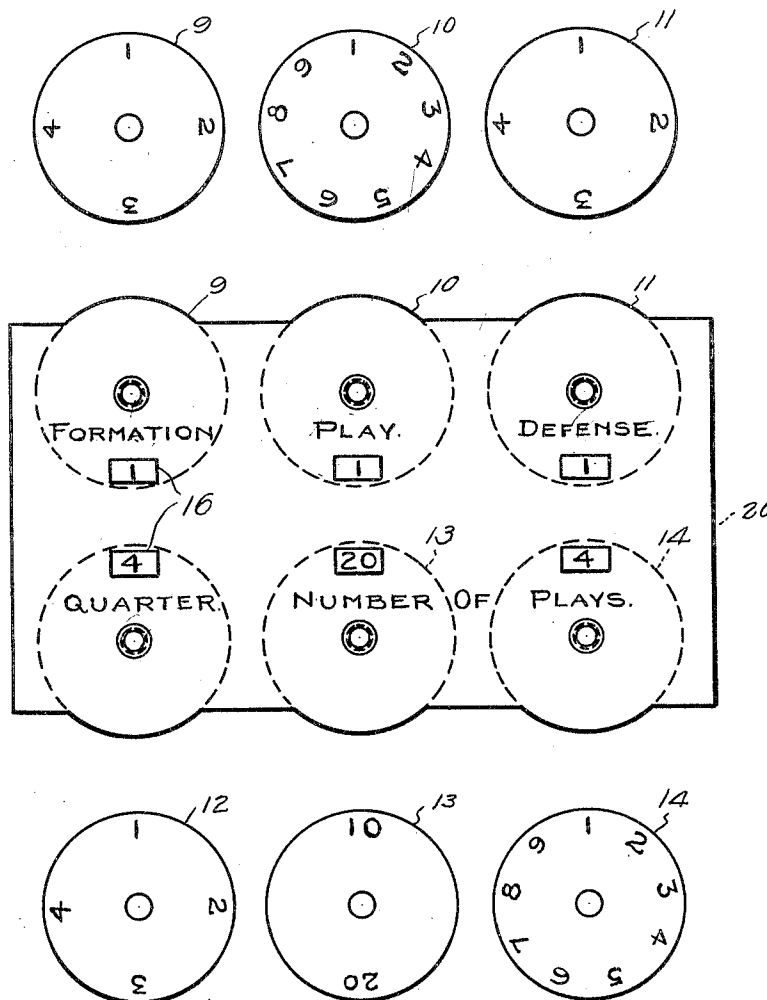


FIG-2

INVENTOR
Vigil C. Harkrader
PER Jeff and Jeff
ATTORNEYS

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V. C. HARKRADER

FOOTBALL GAME

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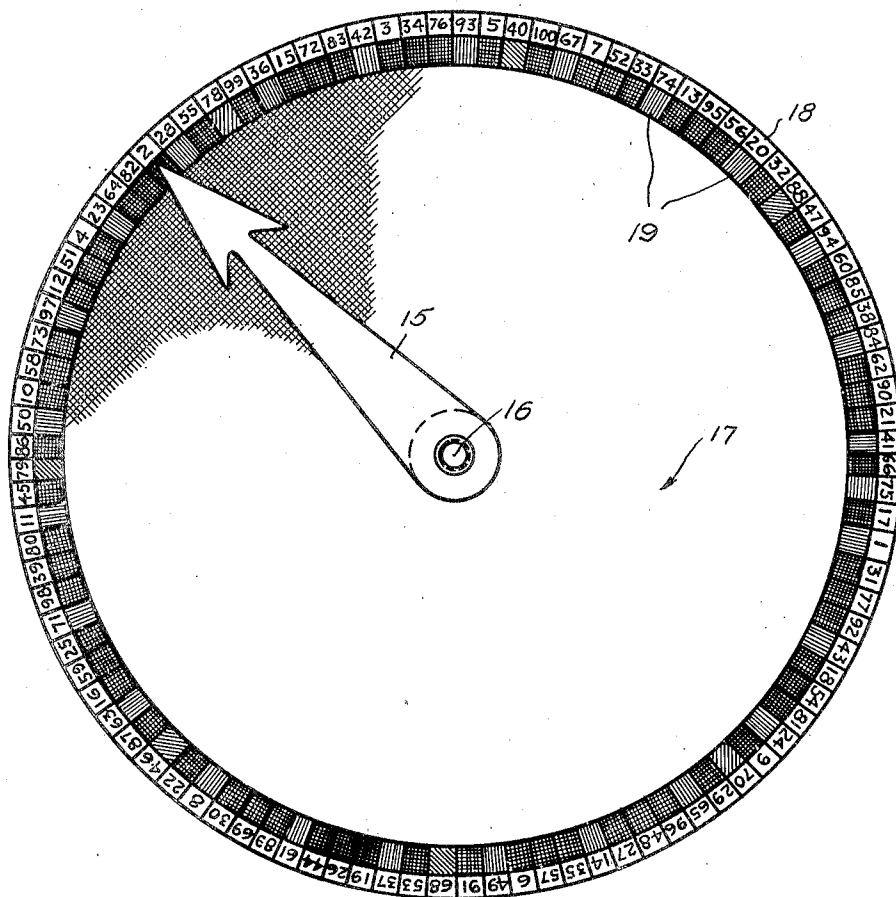


FIG.-3

INVENTOR
Virgil C. Harkrader
PER Jefft and Jefft
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V. C. HARKRADER

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FOOTBALL GAME

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INDEX

PLAYS STARTED FROM SCRIMMAGE

COMBINATION	PAGE	COMBINATION	PAGE	COMBINATION	PAGE
111	3	211	4	311	4
112	3	212	4	312	4
113	3	213	4	313	4
114	3	214	4	314	4
121	5	221	6	321	6
122	5	222	6	322	6
123	5	223	6	323	6
124	5	224	6	324	6
131	7	231	7	331	7
132	7	232	7	332	7
133	7	233	7	333	7
134 B	7	234 B	7	334 B	7
134 D	7	234 D	7	334 D	7
141	8	241	8	341	8
141 B	8	241 B	8	341 B	8
142	8	242	8	342	8
143	8	243	8	343	8
144 B	8	244 B	8	344 B	8
144 D	8	244 D	8	344 D	8
151	9	251	9	351	9
152	9	252	9	352	9
153	9	253	9	353	9
154	9	254	9	354	9
161	11	261	13	381	15
162	11	262	13	382	15
163	11	263	13	383	15
164	11	264	13	384	16
R 161	12	R 261	14	R 381	14
R 162	12	R 262	14	R 382	14
R 163	12	R 263	14	R 383	14
R 164	12	R 264	14	R 384	14
		271	2		
		272	2		
		273	2		
		274	2		
191	10	291	10	391	10
192	10	292	10	392	10
193	10	293	10	393	10
194	10	294	10	394	10

FREE KICKS

THE KICK OFF (KO)	1
RETURN OF THE KICK OFF (RKO)	1
LONG PUNTS (FLP)	18
RETURN OFF LONG PUNTS (RFLP)	18
SHORT PUNTS (FSP)	18
RETURN OF SHORT PUNTS (RFSP)	18
PLACE KICKS FOR DISTANCE (FPKD)	1
RETURN OF PLACE KICKS FOR DISTANCE (RFPKD)	1
ATTEMPTS AT FIELD GOALS (FAFG)	17
RETURN OF ATTEMPTS AT FIELD GOALS (RFAFG)	1

FIG--4.

INVENTOR
Virgil C. Harkrader
 BY *Lefft and Lefft*
 ATTORNEYS

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TABLE OF FORMATIONS AND PLAYS ~

OFFENSIVE FORMATIONS

CLOSE FORMATION	1
PUNT	2
PLACE KICK	3

OFFENSIVE PLAYS

LINE PLUNGE	1
END RUN	2
SHORT PASS (3 TO 8 YARDS)	3
MEDIUM " (10 TO 20 YARDS)	4
LONG " (25 TO 50 YARDS)	5
PUNT	6
OUT OF BOUND PUNT	7
PLACE KICK	8
DELIBERATE PASS OVER GOAL LINE (NOT OVER 40 YARDS)	9

DEFENSES

CLOSE DEFENSE	1
POSSIBLE PUNT DEFENSE	2
CERTAIN PUNT "	3
GOAL LINE "	4

NOTE:

AGAINST PLAY 3 — INSIDE OF DEFENSIVE
TEAMS 10 YARD LINE — DEFENSE 4 BECOMES
4B; AGAINST PLAY 4 DEFENSE 1 BECOMES
1B AND DEFENSE 4 BECOMES 4B. ~

FIG - 5

INVENTOR
Virgil C. Harkrader
PER *Left and Left*
ATTORNEYS

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V. C. HARKRADER

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EXPLANATIONS OF ABBREVIATIONS

BK GL	BLOCKED KICK; BALL RECOVERED BY OPPONENTS
BK BL	BLOCKED KICK; BALL RECOVERED BY KICKING TEAM
BK 5G etc.	FOR LOSS OR GAIN SHOWN
C 15	FORWARD PASS OF LENGTH SHOWN COMPLETED
C 9 etc.	RECEIVER DOWNED AT POINT OF CATCH
C 15+20	FORWARD PASS OF LENGTH SHOWN COMPLETED
C 4 +15 etc.	RECEIVER RUNS FOR ADDITIONAL GAIN SHOWN
45 D	PUNT TRAVELS DISTANCE SHOWN; DOWNED BY
36 D etc.	KICKERS ENDS. NO RETURN OR FAIR CATCH ALLOWED
FBL	FUMBLE; BALL RECOVERED BY OPPONENTS.
I 20	FORWARD PASS OF LENGTH SHOWN INTERCEPTED.
I 7 etc.	INTERCEPTER DOWNED AT POINT OF CATCH
I 20+15	FORWARD PASS OF LENGTH SHOWN INTERCEPTED
I 5+55 etc.	INTERCEPTER RUNS FOR NUMBER OF YARDS SHOWN
K	FREE KICK RECOVERED BY KICKING TEAM; NO ADVANCE
15-K	FREE KICK OF LENGTH SHOWN RECOVERED BY KICKING
20-K etc.	TEAM. NO ADVANCE.
48 OB	KICK OF LENGTH SHOWN GOES OUT OF BOUNDS.
36 OB etc.	NO RETURN OR FAIR CATCH CAN BE MADE
L 5 etc.	LOSS FOR YARDS SHOWN.
NG	NO GAIN
X 15 etc.	FORWARD PASS OF LENGTH SHOWN INCOMPLETE

COLOR HAZARDS

PURPLE	FIVE YARD PENALTY ON OFFENSIVE TEAM
GREEN	FIVE YARD PENALTY ON DEFENSIVE TEAM
BROWN	FIFTEEN YARD PENALTY ON OFFENSIVE TEAM
BLUE	FIFTEEN YARD PENALTY ON DEFENSIVE TEAM
RED	(RUNNING AND PLUNGEING PLAYS ON FOURTH DOWN ONLY)
	FAILURE BY INCHES TO MAKE YARDAGE SHOWN IN KEY
BLACK	(RUNNING, PLUNGEING AND PASSING PLAYS BETWEEN
	OFFENSIVE'S TEAM'S OWN GOAL AND TWENTY YARD LINE)
	FUMBLE RECOVERED BY OPPONENT.

FIG.-6

INVENTOR
Vergil P. Harkrader
 PER *Left and Left*
 ATTORNEYS

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V. C. HARKRADER

FOOTBALL GAME

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KICK OFF AND THE RETURN OF THE KICK OFF

	K.O. F.P.K.D.	R.K.O. R.F.P.K.D.				K.O. F.P.K.D.	R.K.O. R.F.P.K.D.	
1	65	15				51	58	25
2	45	10				52	40	5
3	50	50				53	65	15
4	40	10				54	45	10
5	38	5				55	50	FBL
6	50	15				56	48	20
7	35	10				57	45	10
8	45	20				58	40	15
9	50	15				59	55	10
10	40	10				60	48 OB	FBL
11	65	25				61	40	NG
12	45	10				62	45	10
13	48	NG				63	50	15
14	50	10				64	56	10
15	40	5				65	40	20
16	45	15				66	65	10
17	30	10				67	45	15
18	50	20				68	50	5
19	45	10				69	35	10
20	45 OB	FBL				70	40	15
21	40	10				71	30	20
22	65	NG				72	45	10
23	45	10				73	33	10
24	30	15				74	40	15
25	56	10				75	50	5
26	40	70				76	45	10
27	45	20				77	55	10
28	50	5				78	50	25
29	35	25				79	65	10
30	40	10				80	50 OB	FBL
31	53	15				81	45	50
32	65	10				82	40	10
33	65	40				83	65	15
34	45	10				84	50	10
35	50	10				85	40	5
36	40	15				86	55	40
37	45	20				87	40	10
38	50	5				88	50	15
39	42	15				89	50	10
40	50 OB	10				90	45	15
41	45	10				91	65	10
42	40	15				92	25	20
43	50	10				93	45	15
44	65	5				94	42	10
45	40	NG				95	50	25
46	45	10				96	45	10
47	40	15				97	40 OB	5
48	50	10				98	45	12
49	35	20				99	15 K	10
50	45	10				100	40	NG

FIG-7

INVENTOR
Vigil C. Harkrader
PER Jeff and Jeff
ATTORNEYS

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V. C. HARKRADER

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24 Sheets-Sheet 8

DELIBERATE OUT OF BOUND PUNTS

	274 271	272	273			274 271	272	273
1	BK BL	BK BL	BK BL		51	25 OB	BK BL	BK BL
2	25 OB	25 OB	25 OB		52	26 "	BK 10L	BK BL
3	26 "	26 "	26 "		53	27 "	BK 5G	30 OB
4	27 "	10 L	27 "		54	28 "	25 OB	30 "
5	28 "	28 OB	28 "		55	29 "	26 "	29 "
6	29 "	29 "	30 "		56	30 "	27 "	28 "
7	30 "	30 "	10 L		57	31 "	28 "	27 "
8	31 "	31 "	BK BL		58	32 "	29 "	26 "
9	32 "	32 "	BK BL		59	33 "	30 "	31 "
10	33 "	33 "	33 OB		60	34 "	30 "	32 "
11	34 "	34 "	30 "		61	35 "	30 "	33 "
12	35 "	35 "	34 "		62	34 "	10 L	30 "
13	34 "	34 "	35 "		63	33 "	10 L	30 "
14	33 "	33 "	33 "		64	32 "	30 OB	30 "
15	32 "	32 "	32 "		65	31 "	30 "	30 "
16	31 "	31 "	31 "		66	31 "	30 "	30 "
17	10 L	BK 10L	BK 10L		67	30 "	31 "	10 L
18	30 OB	30 OB	BK BL		68	30 "	32 "	12 L
19	30 "	30 "	30 OB		69	30 "	33 "	26 OB
20	30 "	30 "	31 "		70	30 "	34 "	27 "
21	30 "	30 "	30 "		71	30 "	35 "	28 "
22	30 "	30 "	30 "		72	30 "	36 "	29 "
23	BK BL	BK BL	30 "		73	30 "	37 "	30 "
24	29 OB	29 OB	30 "		74	29 "	31 "	31 "
25	28 "	28 "	29 "		75	28 "	30 "	32 "
26	27 "	27 "	28 "		76	27 "	29 "	33 "
27	26 "	26 "	27 "		77	26 "	28 "	34 "
28	25 "	25 "	26 "		78	25 "	27 "	35 "
29	26 "	26 "	29 "		79	26 "	26 "	34 "
30	27 "	27 "	7 L		80	BK 12L	30 "	BK 5G
31	28 "	28 "	28 OB		81	29 OB	31 "	33 OB
32	29 "	29 "	29 "		82	30 "	32 "	32 "
33	30 "	30 "	30 "		83	31 "	30 "	31 "
34	30 "	BK 10L	30 "		84	32 "	29 "	30 "
35	30 "	30 OB	30 "		85	33 "	28 "	29 "
36	30 "	31 "	30 "		86	32 "	27 "	28 "
37	31 "	32 "	28 "		87	31 "	32 "	27 "
38	32 "	33 "	27 "		88	30 "	33 "	BK 10L
39	BK 5G	33 "	26 "		89	25 "	28 "	30 OB
40	33 OB	33 "	25 "		90	31 "	27 "	30 "
41	34 "	35 "	26 "		91	30 "	26 "	30 "
42	35 "	34 "	27 "		92	31 "	BK 10L	30 "
43	34 "	30 "	28 "		93	12 L	30 OB	30 "
44	30 "	30 "	29 "		94	30 OB	30 "	30 "
45	30 "	30 "	30 "		95	30 "	30 "	31 "
46	30 "	30 "	30 "		96	30 "	30 "	32 "
47	30 "	30 "	30 "		97	30 "	30 "	33 "
48	30 "	30 "	30 "		98	28 "	30 "	35 "
49	30 "	30 "	30 "		99	27 "	30 "	30 "
50	30 "	30 "	30 "		100	30 "	30 "	30 "

FIG-8

INVENTOR

Virgil C. Harkrader

PER

Left and Left

ATTORNEYS

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V. C. HARKRADER

FOOTBALL GAME

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LINE PLUNGES FROM CLOSE FORMATION

	111	112	113	114			111	112	113	114
1	1	3	3	NG		51	NG	4	4	3
2	3	4	4	2L		52	1	10	1	3L
3	NG	NG	2	3		53	4	1	3	1
4	4	1	1	3		54	7	4	5	3
5	1	5	3	2		55	1	NG	2	3
6	5	3	NG	NG		56	NG	10	11	NG
7	2	9	5	1		57	3	5	7	1
8	2	4	4	2		58	12	6	6L	3
9	4	10	7	3		59	1	8	4L	1
10	1	2	2	3		60	FBL	FBL	FBL	6
11	4	3	3	2		61	2	3	3	NG
12	3	1	4	NG		62	8	3	3	FBL
13	1	NG	5	3		63	1	1	1	2
14	1	1	2	1		64	3	4	4	3
15	6	3	9	2		65	3	1	1	NG
16	2L	9	2	4		66	1	NG	5	2
17	1	3	12	1		67	1	1	1	3
18	4L	2	21	NG		68	2	10	7	2
19	3	2L	3	3		69	NG	2	1	3
20	NG	4L	2L	3		70	4	3	NG	1
21	3	1	2	1		71	3	1	4	NG
22	10	7	4	NG		72	NG	2	2	2
23	2	1	1	3		73	NG	5	5	3
24	2	2	2	1		74	4	2	2	1
25	9	9	5	NG		75	5	6	8	3
26	5	NG	1	3		76	1	3	4	4
27	2	2	3	2L		77	NG	4	3	1
28	2	2	2	3		78	NG	1	10	NG
29	3	6	6	3		79	1	NG	15	5
30	1	3	4	NG		80	FBL	FBL	FBL	1
31	NG	1	NG	2		81	NG	NG	NG	1
32	4	9	5	3		82	3	1	3	2
33	3	NG	4	2		83	1	7	8	NG
34	1	1	2	2		84	2	2	2	3
35	7	5	6	NG		85	NG	3	4	2
36	1	1	1	1		86	2	4	5	2
37	3	1	1	2		87	NG	1	1	3
38	8	3	3	FBL		88	4	10	2	NG
39	6L	4	9	3		89	1	3	3	2
40	FBL	6L	1	1		90	3	NG	NG	4
41	3	4	4	3		91	2	5	5	1
42	2	3	3	NG		92	NG	2	4	4
43	4	1	18	2		93	2	2	2	1
44	3	1	4	1		94	1	1	1	NG
45	1	3	1	2		95	5	7	6	4
46	NG	2	3	2		96	3	1	3	FBL
47	2	NG	NG	NG		97	1	2	2	3
48	5	2	5	3		98	4	8	12	1
49	2	4	4	2		99	6	15	11	3
50	1	1	1	NG		100	1	FBL	FBL	NG

FIG-9

INVENTOR

Virgil C. Harkrader

PER Tiff and Duff

ATTORNEYS

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V. C. HARKRADER

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LINE PLUNGES FROM PUNT OR PLACE KICK FORMATION

	211 311	212 312	213 313	214 314			211 311	212 312	213 313	214 314
1	1	1	1	FBL		51	4	3	3	1
2	1	4	2	1		52	NG	NG	2	2
3	NG	NG	3	NG		53	1	2	NG	NG
4	2	2	NG	1		54	NG	7L	3	2
5	5	1	4	1		55	NG	3	5	2
6	NG	3	1	2		56	7	1	6	NG
7	1	5	5	NG		57	2	4	2	2
8	3	1	1	2		58	4L	5	7	3
9	1	7	3	1		59	FBL	6	4	3
10	1	1	1	NG		60	3	NG	2L	3
11	1	1	1	2		61	1	1	1	NG
12	1	2	12	3		62	1	1	NG	1
13	NG	NG	2	4L		63	2	2	2	1
14	1	1	1	2		64	NG	2	2	1
15	3	3	3	1		65	2	2	2	3
16	2	9	NG	NG		66	3	NG	1	NG
17	2L	1	7	4		67	2	2	2	3
18	FBL	10	15	1		68	1	3	3	FBL
19	FBL	1	4L	NG		69	NG	1	1	1
20	3	10	4L	1		70	1	2	2	1
21	NG	1	NG	1		71	1	1	1	1
22	1	4	2G	NG		72	1	3	3	NG
23	2	2	2	2L		73	NG	NG	NG	1
24	1	1	1	1		74	2	3	3	2
25	2	2	3	1		75	NG	3	3	2
26	NG	NG	5	NG		76	NG	4	4	10L
27	1	3	4	3		77	3	6	6	2
28	1	8	1	1		78	NG	1	1	NG
29	NG	5	3	2		79	4	4	4	2
30	3	1	FBL	NG		80	5	FBL	FBL	NG
31	1	7	2	6L		81	1	NG	NG	NG
32	NG	3	NG	3		82	1	1	1	1
33	5	NG	1	1		83	1	3	3	3
34	2	2	10	1		84	3	3	3	3
35	2	2L	3	NG		85	NG	3	3	NG
36	2	2	2	2		86	1	1	21	1
37	2	2	2	2		87	1	6	6	1
38	10	9	7	2		88	3	NG	NG	1
39	4L	1	8	4		89	3	2	5	1
40	3	4L	15	NG		90	2	4L	4L	NG
41	4	4	4	NG		91	6	1	11	1
42	4	4	4	1		92	2	3	2	2
43	2	2	2	1		93	1	1	1	2
44	1	1	2	NG		94	2	2	2	FBL
45	NG	NG	NG	1		95	6L	4	9	2
46	2	2	3	3		96	2	NG	12	2
47	1	1	1	1		97	2	2	2	NG
48	3	3	4	NG		98	4	FBL	18	5
49	1	1	1	1		99	9	8	6	4
50	1	1	1	3		100	2	FBL	FBL	NG

FIG. 10

INVENTOR
Virgil C. Harkrader
 PER *Defft and Defft*
 ATTORNEYS

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END RUNS FROM CLOSE FORMATION

	121	122	123	124			121	122	123	124
1	1	3	2	3	51	5	9	9	2L	
2	1L	5	NG	2	52	3	5	8	3	
3	6	NG	5	FBL	53	3L	10	4	4	
4	NG	7	6	5	54	NG	NG	4L	2L	
5	4	4	4	3	55	8	1	5	4	
6	2	3	7	1L	56	4L	7	5S	5	
7	10	10	9	2	57	7	14	4L	5L	
8	2	2	4	2	58	1L	6	3L	5	
9	35	5	11	NG	59	NG	16	1	3	
10	13	5	3	3	60	5L	4	6	NG	
11	4	4	1	1L	61	1	1	4	1	
12	7	6	3	2	62	NG	7	3	3L	
13	5	NG	5	4	63	1	1	1	2	
14	3	11	4L	1	64	5	6	NG	2	
15	3L	20	10	4	65	2	2	2	2	
16	NG	1L	6	5	66	2	4	6	NG	
17	FBL	8	4	5	67	1	1	3	2	
18	2L	1L	13	4L	68	5	5	2	FBL	
19	FBL	2L	14	1	69	NG	NG	1	3	
20	4L	1	7	NG	70	4	3	1	3	
21	6	7	NG	2L	71	3	3	5	2	
22	9	3	1	NG	72	6	8	7	4	
23	2	12	3	2L	73	3	6	1	4	
24	11	1	7	5	74	3	3	3	3L	
25	4	12	1	2	75	7	2	25	4	
26	NG	3	17	2	76	4	5	1	5	
27	2	10	12	2	77	8	14	4	1	
28	3	3	10	4	78	NG	2	5	5	
29	5	5	2	4L	79	5	7	40	NG	
30	5	30	8	3	80	16	NG	FBL	2	
31	NG	NG	4	3	81	NG	6	NG	3L	
32	7	1	7	4	82	5	7	6	2	
33	3	2L	5	1	83	8	18	10	2	
34	5	6	15	3	84	1	1	3	NG	
35	20	3L	3	2L	85	4L	4L	7	2	
36	1	1	1	5	86	4	5L	5	4L	
37	2	2	FBL	5	87	NG	NG	2	2L	
38	12	3L	6	1	88	5	FBL	19	3	
39	1L	7	9	NG	89	6	6	NG	2	
40	5L	4	13	3	90	2	5	4	3	
41	12	2	3	NG	91	3L	NG	8	4	
42	2	2	1	2	92	3	2	7	4	
43	4	4	NG	1L	93	3	3	2	FBL	
44	6	6	9	2	94	4	4	2	4	
45	2L	7	6	2	95	7	FBL	3L	1	
46	1	5	1	1	96	25	4	6	3	
47	FBL	NG	7	2	97	NG	1	1	4	
48	4	13	14	3	98	4	FBL	20	5L	
49	1	1	5	1	99	NG	10	5	3	
50	1	1	3	4	100	4L	9	FBL	1	

INVENTOR

Virgil C. Harkrader

PER

Lefft and Lefft

ATTORNEYS

FIG.-11

Feb. 5, 1929.

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V. C. HARKRADER

FOOTBALL GAME

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END RUNS FROM PUNT OR PLACE KICK FORMATION

END RUNS FROM FRONT					END RUNS FROM BACK					
	221 321	222 322	223 323	224 324			221 321	222 322	223 323	224 324
1	3	3	2	10L	51	7	1	2	NG	
2	5	10	6	2	52	14	7	8	2	
3	2	4	11	3	53	NG	NG	3	4	
4	4	NG	1	2	54	2L	5	40	4	
5	NG	4	7	1	55	FBL	FBL	7	4L	
6	6	3	NG	FBL	56	8	7L	6L	5	
7	3	6	8	2	57	8L	7	11	3	
8	2	2	5	3	58	5	6	6	3	
9	7	7	9	2	59	5	10L	10L	3	
10	1	11	4	9L	60	FBL	NG	5	6	
11	4	4	3	1	61	1	2	3	4L	
12	4	9	10	2	62	6	6	7	2	
13	20	5	14	NG	63	1	2	4	NG	
14	3	3	3	3	64	NG	14	6	1	
15	2L	FBL	25	3	65	2	2	4	3L	
16	16	6	6	4	66	5	4	2	1	
17	NG	NG	25	4	67	1	1	4	2	
18	4L	15	3	5	68	4	2	2	3	
19	9	8	7	5	69	3	1	3	2	
20	7L	7	5	3	70	5	5	2	2	
21	5	4	6	NG	71	3	3	1	3L	
22	10L	6	7	1	72	7	20	7	2	
23	2	13	12	1	73	3	NG	NG	NG	
24	1	1	1	2L	74	3	3	2	4	
25	7	8	5L	8L	75	35	3L	17	FBL	
26	2	2	8	2	76	NG	9	5	3	
27	NG	7	1	3	77	8	19	FBL	3	
28	3	1	4	2	78	3L	7	6	2L	
29	6	4	10	FBL	79	5	FBL	FBL	4	
30	4	NG	13	2L	80	5L	4	5	5	
31	NG	NG	9	NG	81	NG	6	6	NG	
32	4	2	9	2	82	3	20	7	1	
33	2	3	15	4	83	6	25	8	2L	
34	NG	6	6	7L	84	1	1	5	2	
35	8	9	35	3	85	25	6L	2	2L	
36	11	1	4	3	86	4	5	NG	3	
37	2	12	2L	4	87	5	2	1	1	
38	12	7	7	5	88	NG	35	14	1L	
39	5	13	5	5	89	7	NG	13	2	
40	1L	NG	4	3	90	4L	6	3	2	
41	2	2	1	1	91	9L	5	2	NG	
42	12	2	1	6L	92	FBL	25	19	2	
43	4	4	5	2	93	3	3	4	4	
44	5	4	7	1	94	4	4	1	FBL	
45	NG	3	6	NG	95	FBL	2	20	4	
46	2	5	1	2	96	10	FBL	7L	5	
47	1	6	NG	3	97	1	1	3	3	
48	6	10	NG	2	98	3L	7	FBL	6	
49	1	5	3	5L	99	NG	5L	3	3	
50	1	5	4	2L	100	6L	7	6	3	

FIG-12.

INVENTOR
Virgil C. Harkrader
 PER *Defft and Defft*
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V. C. HARKRADER

FOOTBALL GAME

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SHORT PASSES FROM ANY FORMATION

	131 231 331 134 B 234 B 334 B	132 232 332	133 233 333 134 D 234 D 334 D			131 231 331 134 B 234 B 334 B	132 232 332	133 233 333 134 D 234 D 334 D
1	C 5+4	C 3+4	C 3+3		51	I 5	X 5	C 0+1
2	X 5	I 3+10	I 3+5		52	C 5+40	L 5	X 8
3	I 3	C 6+5	C 4+2		53	I 5+5	C 4+3	C 7+1
4	X 7	L 3	FBL		54	I 5	X 3	X 4
5	C 5	FBL	C 4+7		55	X 7	I 6+40	C 5
6	I 3	C 4+1	X 3		56	C 6+4	C 5+5	X 4
7	X 3	X 3	C 3+6		57	X 6	X 4	C 6
8	X 4	I 3+2	C 5+5		58	X 8	X 5	X 5
9	X 6	C 5+12	C 6+5		59	L 3	X 6	C 8
10	C 5+3	X 4	X 4		60	C 8+1	C 6+1	C 5
11	I 3+5	X 5	X 5		61	X 6	I 6+6	C 5+2
12	X 7	C 6+2	I 4+9		62	C 4+5	C 8	X 6
13	I 7	X 5	C 3+1		63	X 5	X 7	X 6
14	C 6+11	I 3+8	X 6		64	X 4	C 8	L 5
15	FBL	X 7	C 7+1		65	I 6+4	C 5+2	X 4
16	X 8	C 5+1	X 6		66	C 3+1	I 6+3	I 3+10
17	FBL	X 8	C 0+2		67	I 6+4	C 8+4	X 4
18	C 6	X 8	X 6		68	X 4	X 8	FBL
19	I 4	I 4+1	C 8+1		69	X 3	C 3+2	C 4+1
20	C 6+2	C 7+1	X 7		70	C 5+2	L 7	X 7
21	C 7+3	C 6+1	L 3		71	I 6	C 4+4	C 5
22	X 5	I 4+25	C 5+1		72	X 5	I 6	C 5
23	I 4+2	C 6+7	C 5+2		73	X 6	C 8+5	C 6
24	C 6+2	X 6	I 6+2		74	C 7+1	FBL	I 6+30
25	X 6	I 5+7	X 8		75	X 7	I 7	C 6+1
26	X 7	C 4+6	C 3+1		76	X 8	C 5+1	X 8
27	C 3+2	FBL	C 4+1		77	C 7+1	X 3	C 6
28	L 4	X 7	C 4+1		78	I 8+9	X 4	X 3
29	X 8	C 5+3	X 3		79	L 5	X 5	C 6
30	I 4+9	X 6	C 3+1		80	C 7+1	C 7+1	C 7
31	C 4+2	I 4+1	X 6		81	C 4	X 6	X 5
32	I 4+50	L 4	X 5		82	X 3	X 7	X 5
33	X 6	X 7	X 5		83	I 8+40	C 8	L 7
34	I 7	C 5+5	X 4		84	C 8+5	X 7	X 4
35	X 4	X 8	C 6+2		85	X 4	C 6+1	X 5
36	C 5+2	C 5+3	X 6		86	I 7+30	X 8	C 6
37	FBL	I 5	C 3+3		87	C 5+7	C 6+1	I 8+40
38	X 3	C 7+1	X 6		88	X 5	X 5	C 4
39	C 6+3	X 4	C 6+1		89	I 8	C 4	C 4
40	X 6	X 7	C 6+1		90	C 5+1	X 5	C 6
41	C 6+4	C 6+1	C 5		91	X 6	I 8	FBL
42	X 4	I 5+40	C 7		92	X 7	C 7+2	I 7+50
43	I 3	C 6+1	C 8		93	X 8	X 5	C 5
44	C 4+1	X 5	I 7+2		94	X 5	C 7	X 6
45	X 5	X 5	C 4		95	C 8	X 6	C 7
46	X 4	C 3+2	L 4		96	L 7	X 7	X 6
47	X 4	X 6	C 4+2		97	X 3	X 7	C 6
48	C 3+4	X 7	I 8		98	X 8	X 8	X 5
49	X 5	X 8	C 5+1		99	X 5	X 3	C 5
50	X 4	C 5+18	X 7		100	C 8+1	X 7	C 5

FIG.-13

INVENTOR
Virgil C. Harkrader
 PER *Reff and Reff*
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V. C. HARKRADER

FOOTBALL GAME

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MEDIUM LENGTH PASSES FROM ANY FORMATION

	141 241 341 144 B 244 B 344 B	142 242 342 141 B 241 B 341 B	143 243 343 144 D 244 D 344 D			141 241 341 144 B 244 B 344 B	142 242 342 141 B 241 B 341 B	143 243 343 144 D 244 D 344 D
1	C 11+5	C 10+2	C 10+3		51	C 15+1	X 12	C 16+5
2	X 10	X 10	X 10		52	X 11	I 20	C 11
3	I 10+5	I 10+5	I 10+20		53	FBL	X 13	C 12
4	FBL	X 11	X 11		54	C 16+1	C 12+1	C 17+3
5	C 11+2	C 11+3	C 11+5		55	X 10	X 14	X 13
6	X 12	X 12	X 12		56	I 20	I 10	X 14
7	L 6	I 11+6	L 7		57	X 12	X 14	C 18+1
8	I 11+3	X 13	FBL		58	I 10	C 13+1	X 18
9	X 13	X 12	C 12+		59	X 13	C 14+1	C 19+3
10	C 11+21	X 14	X 13		60	X 14	X 17	X 16
11	X 14	X 15	C 11+8		61	X 11	I 11+20	I 16+8
12	I 12+2	I 12+2	X 14		62	C 19+10	X 16	C 20+8
13	X 15	X 16	C 14+5		63	X 15	FBL	X 17
14	C 13+3	FBL	X 15		64	I 12+21	X 16	X 18
15	X 16	C 13+5	I 11+11		65	X 16	C 16	C 10+4
16	I 14	X 16	C 15+8		66	C 18+1	X 19	X 19
17	X 17	I 13+9	X 17		67	X 17	X 20	I 17+8
18	C 14+11	X 18	X 18		68	FBL	I 12+7	C 11+9
19	C 18	C 14+6	C 16+5		69	L 8	X 10	I 20
20	C 15+5	X 19	X 17		70	C 19	C 16+1	I 20
21	C 16+10	I 14+3	L 6		71	X 18	L 10	I 18
22	I 14+12	C 15+10	C 17+13		72	X 13	X 11	C 12+6
23	X 19	X 20	X 19		73	X 19	I 13	X 10
24	I 15+15	I 15+8	X 10		74	C 20	X 12	C 13+7
25	C 16	X 10	X 20		75	X 10	C 17+2	X 11
26	X 20	C 16+1	C 18+3		76	X 11	X 13	C 14+11
27	C 17	X 11	X 11		77	C 10	I 14+60	X 12
28	X 18	X 12	I 12+9		78	X 12	X 14	X 13
29	X 11	I 16+7	X 14		79	X 14	C 18	C 13+9
30	I 16+3	X 13	C 19+1		80	C 11	X 15	X 14
31	C 18+11	C 17+2	X 13		81	C 12	X 16	C 16
32	X 12	X 14	C 20+7		82	X 15	I 15+44	I 19+36
33	L 8	L 6	X 14		83	X 13	C 19	X 15
34	C 19+12	X 15	X 14		84	C 13	X 14	C 16
35	X 14	X 18	C 10+3		85	X 14	X 18	L 10
36	I 17+2	X 16	X 16		86	I 16+9	I 16	X 16
37	X 17	X 17	X 17		87	C 15	C 20	I 17+35
38	C 20+30	I 17+2	C 11+2		88	X 18	X 19	C 18
39	C 10	X 18	I 14		89	L 10	L 7	FBL
40	X 16	C 19	C 12+5		90	X 16	FBL	C 10
41	C 11+6	C 20+3	C 13+4		91	C 15	C 10+20	I 20+15
42	C 12+2	X 19	I 14		92	X 17	X 20	I 18+11
43	X 13	I 18+2	X 18		93	X 17	X 12	C 20
44	X 18	X 20	C 14+5		94	X 18	X 10	X 19
45	C 13+3	C 10+2	X 19		95	X 19	X 11	C 15
46	X 19	X 10	I 15		96	C 16	C 11	X 20
47	C 11+1	I 19+1	C 15		97	C 17	X 12	I 10
48	C 14+6	X 11	X 20		98	X 18	I 18	C 11
49	C 20	L 8	FBL		99	X 10	C 12	C 10
50	X 19	C 11+1	X 10		100	X 10	X 13	C 11

FIG-14. INVENTOR
 Virgil C. Harkrader
 PER Jeff and Jeff
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Feb. 5, 1929.

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V. C. HARKRADER

FOOTBALL GAME

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LONG PASSES FROM ANY FORMATION

	151 251 351 154 254 354	152 252 352	153 253 353			151 251 351 154 254 354	152 252 352	153 253 353
1	C 25	X 25	I 25+12		51	C 30	X 30	X 35
2	I 25+10	C 25	FBL		52	X 35	L 10	X 40
3	FBL	X 30	X 25		53	X 25	X 35	C 40
4	X 25	FBL	C 25		54	X 25	X 30	X 35
5	C 35	X 35	I 30+16		55	X 30	X 35	X 40
6	X 30	X 25	X 30		56	X 35	X 35	X 35
7	X 30	X 40	L 12		57	X 25	X 35	X 40
8	X 35	X 45	X 35		58	X 30	X 50	X 35
9	L 8	X 30	I 35+20		59	X 35	X 35	X 35
10	X 40	C 30	C 30		60	X 25	X 35	X 40
11	X 45	X 50	X 40		61	C 25+25	C 25	C 35
12	I 35+5	X 25	I 40+20		62	I 25	X 35	I 40+20
13	X 50	I 25+40	X 45		63	L 12	L 12	C 35
14	X 25	X 30	I 45+10		64	I 35	X 30	I 45+45
15	C 35	X 35	C 35		65	C 30	C 30	C 40
16	I 40+5	X 45	X 50		66	X 35	I 40+40	X 40
17	X 35	X 35	X 25		67	X 25	I 35+12	I 25+20
18	C 40	C 35	X 30		68	FBL	I 35+15	X 35
19	X 35	I 40+30	X 35		69	X 25	FBL	FBL
20	X 40	X 30	X 40		70	X 30	I 40+20	X 40
21	I 45+85	I 35+40	X 40		71	C 35	C 35	X 25
22	X 45	X 25	C 40		72	X 35	X 30	X 35
23	L 10	X 30	X 35		73	X 25	X 35	L 10
24	X 50	I 50+25	X 25		74	X 30	X 40	X 40
25	I 50+70	X 35	X 25		75	C 25	X 45	I 35+20
26	I 30+10	C 40	X 30		76	C 25	X 45	I 35+20
27	X 30	X 25	C 50		77	X 30	X 25	X 40
28	X 25	I 25+45	I 35+15		78	X 25	X 40	X 35
29	C 45+20	X 30	X 25		79	X 30	X 30	X 25
30	FBL	L 8	L 12		80	X 25	X 40	X 25
31	X 25	X 40	X 30		81	X 25	X 25	I 40+25
32	X 35	X 40	I 40+20		82	X 30	X 30	X 25
33	C 50	C 45	X 35		83	C 35	X 35	X 30
34	X 30	X 50	C 25		84	C 25	X 40	X 25
35	X 35	I 30+20	X 35		85	C 35	X 25	X 30
36	X 40	X 45	I 45+45		86	C 35	C 30	X 25
37	C 26	X 35	X 40		87	C 30	C 35	C 35
38	X 35	X 30	X 45		88	X 35	L 12	X 35
39	X 50	C 50	C 30		89	C 35+15	I 35+35	C 35+10
40	C 30	C 25	X 50		90	X 35	I 35+25	C 30
41	X 35	I 35+25	I 25+12		91	I 30	C 40	X 30
42	X 40	I 40+35	I 30+75		92	L 12	I 40+80	C 35
43	X 45	C 30	C 35		93	I 35	C 35	X 35
44	X 50	I 25+15	I 40+25		94	X 35	X 35	X 35
45	C 35	I 25+60	I 45+75		95	C 25	FBL	FBL
46	X 30	C 35	C 35		96	X 25	X 34	X 35
47	C 40	X 30	I 35+15		97	X 30	X 35	X 35
48	X 25	X 30	X 25		98	C 30	C 40	X 30
49	C 25	X 30	X 30		99	X 30	X 36	X 40
50	X 35	X 35	L 10		100	X 35	X 30	X 40

INVENTOR

FIG.-15

PER

ATTORNEYS

Virgil C. Harkrader
Deputy and Deputy

Feb. 5, 1929.

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V. C. HARKRADER

FOOTBALL GAME

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DELIBERATE PASSES OVER GOAL LINE FROM ANY FORMATION
(NOT TO EXCEED FORTY YARDS)

	191 291 391 194 294 394	192 292 392 193 293 393				191 291 391 194 294 394	192 292 392 193 293 393	
1	X	X				51	L15	X
2	X	X				52	X	X
3	X	X				53	X	X
4	X	X				54	X	X
5	X	X				55	X	X
6	X	C				56	X	X
7	X	X				57	X	X
8	C	X				58	X	X
9	X	X				59	X	X
10	FBL	X				60	X	X
11	X	X				61	X	X
12	X	X				62	X	X
13	X	X				63	X	X
14	X	X				64	X	X
15	X	C				65	X	X
16	X	C				66	X	X
17	X	C				67	C	X
18	X	FBL				68	X	X
19	C	K				69	X	X
20	L10	X				70	C	X
21	C	X				71	C	X
22	C	X				72	C	X
23	L10	X				73	FBL	X
24	X	X				74	C	C
25	X	X				75	X	X
26	X	X				76	X	X
27	X	X				77	X	X
28	X	X				78	X	C
29	X	X				79	X	X
30	X	L10				80	L8	X
31	X	X				81	X	X
32	X	X				82	X	C
33	X	X				83	X	FBL
34	X	C				84	X	X
35	X	C				85	X	X
36	X	FBL				86	X	X
37	X	L15				87	X	X
38	X	X				88	X	X
39	X	X				89	X	X
40	X	X				90	X	X
41	FBL	X				91	X	X
42	X	X				92	X	L10
43	X	X				93	X	X
44	C	X				94	X	X
45	X	X				95	X	X
46	C	X				96	X	X
47	X	X				97	X	X
48	C	X				98	X	X
49	X	X				99	X	X
50	C	X				100	X	X

FIG.-16

INVENTOR

Virgil C. Harkrader

PER

Asst. and Asst.

ATTORNEYS

Feb. 5, 1929.

V. C. HARKRADER

1,701,002

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PUNTS FROM CLOSE FORMATION

	161 164	162	163		161 164	162	163
1	BK 6L	35	20	51	20	25	30
2	32	20	BK 6L	52	37 D	33	33
3	20	35	29	53	31	29	31
4	36	27	8L	54	38 D	3L	36
5	8L	33	38	55	BK 6L	37	33
6	35 D	BK 6L	BK 5L	56	52 D	34	38
7	27	35	32	57	33	36	BK 6L
8	25	31	28 OB	58	40 D	BK 5L	37
9	37 D	5L	36	59	50 D	38	34
10	30	35	BK 6L	60	28	35	40
11	29	30	38	61	30	BK 15L	9L
12	38 D	BK 5G	39	62	BK 15L	39	22
13	BK 6L	36	37	63	39 D	33	29 OB
14	39 D	38	7L	64	33	5L	27
15	33	30	49	65	22	33	BK 6L
16	40 D	40 D	BK 5L	66	35 D	22	30
17	55 D	28	34	67	25	33 D	3L
18	33	40	40	68	32	27	32
19	42 D	40	35	69	31	BK 6L	BK 8L
20	57 D	35	35	70	4L	32	28
21	27	25	BK 15L	71	36 D	29	35 OB
22	33	BK 6L	29	72	29	20	3L
23	35 D	40	20	73	28	31 D	53
24	BK 5L	27	BK 5L	74	33	25	BK 6L
25	32	33	27	75	25	34	36
26	28	20	BK 6L	76	37 D	BK 5L	22
27	20	35	32	77	38	36	37
28	30	31 OB	28	78	40 D	37	40
29	3L	BK 6L	BK 15L	79	BK 6L	28	BK 6L
30	36 D	32	36	80	31	38	25
31	29	35	BK 6L	81	33	22	27
32	37	30 D	35	82	5L	34	BK 6L
33	32	33	31	83	28	29	30
34	38 D	BK 6L	BK 8L	84	38 D	32	22
35	39	36	39	85	BK 5G	34	BK 5G
36	33	28	33	86	37 D	BK 6L	33
37	25	37	31	87	35 D	34	4L
38	40 D	38	38	88	22	32	33
39	BK 6L	6L	31	89	36 D	4L	BK 6L
40	44 D	33	40	90	31	37	37
41	27	33	34	91	28	32	40
42	39 D	BK 6L	BK 6L	92	33	BK 8L	4L
43	35 D	33	29	93	29	31	BK 5G
44	30	39	8L	94	BK 6L	29	34 OB
45	45 D	7L	27	95	40 D	22	25
46	BK 8L	34	20 OB	96	47 D	33	BK 8L
47	33	33	BK 6L	97	27	39	34
48	32	BK 5G	32	98	49 D	28	35
49	5L	35	28	99	60 D	BK 8L	25
50	36 D	27 OB	BK 6L	100	39 D	39	25

FIG.-17

INVENTOR

Vigil C. Harkrader
Jeff and Jeff

PER
ATTORNEYS

Feb. 5, 1929.

V. C. HARKRADER

1,701,002

FOOTBALL GAME

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RETURN OF PUNTS KICKED FROM CLOSE FORMATION

	R161 R164	R162	R163			R161 R164	R162	R163
1	NG	NG	5		51	7	5	7
2	5	5	10		52	3	3	9
3	3	5	8		53	NG	9	12
4	5	9	NG		54	5	7	6
5	FBL	6	9		55	11	9	15
6	5	FBL	3		56	FBL	NG	10
7	3	5	FBL		57	5	10	12
8	5	3	11		58	5	3	10
9	NG	9	10		59	3	10	10
10	6	NG	6		60	5	12	7
11	3	5	11		61	5	NG	10
12	5	8	7		62	3	3	11
13	9	11	15		63	FBL	5	18
14	3	3	11		64	5	NG	10
15	3	5	7		65	3	3	4
16	10	10	15		66	5	5	9
17	14	NG	10		67	3	FBL	5
18	NG	30	12		68	5	5	12
19	5	25	20		69	7	3	FBL
20	6	3	10		70	NG	5	11
21	5	5	10		71	5	7	10
22	3	9	10		72	3	10	12
23	5	NG	8		73	11	NG	NG
24	NG	3	26		74	5	3	11
25	9	5	6		75	4	9	8
26	3	6	18		76	3	20	7
27	5	5	10		77	4	36	6
28	FBL	5	30		78	5	NG	15
29	5	NG	11		79	NG	9	8
30	3	8	9		80	3	6	10
31	NG	FBL	11		81	NG	3	10
32	6	5	7		82	3	5	8
33	5	3	10		83	5	NG	11
34	3	10	11		84	8	8	10
35	3	8	6		85	3	5	5
36	NG	3	12		86	5	3	20
37	NG	11	20		87	FBL	10	12
38	5	9	9		88	12	5	11
39	3	NG	7		89	5	3	10
40	5	10	10		90	4	7	12
41	3	3	11		91	NG	NG	8
42	5	FBL	10		92	12	5	18
43	NG	5	11		93	5	18	7
44	3	6	11		94	4	FBL	11
45	8	NG	3		95	3	20	6
46	NG	3	20		96	5	10	10
47	5	5	6		97	5	3	6
48	5	8	11		98	NG	7	10
49	NG	5	10		99	3	9	20
50	5	NG	8		100	FBL	15	35

INVENTOR

FIG-18

PER

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Jeff and Jeff

Feb. 5, 1929.

V. C. HARKRADER

1,701,002

FOOTBALL GAME

Filed March 30, 1927

24 Sheets-Sheet 19

PUNTS FROM PUNT FORMATION

	261 264	262	263			261 264	262	263
1	30	25 OB	BK BL		51	40 D	37 OB	40
2	40 D	40	36		52	36	37	35
3	36	34	37		53	35	35	47 OB
4	BK BL	35	25 OB		54	45 D	40	46
5	38 D	BK BL	38		55	27	6L	36
6	36	39	34		56	46 D	41	40
7	20	36	38		57	42 D	47	41
8	40	32	38		58	34	36	42
9	35	38	36 D		59	47 D	46	43
10	45 D	35	BK 5L		60	30 D	48 D	32
11	34	40	40		61	39	40	37
12	42 D	BK 5G	39		62	40 D	40	34
13	46 D	40	35		63	47 D	27	39
14	55 D	40	40		64	36 OB	39	10L
15	34	36	6L		65	34	35	40
16	55 D	36	40		66	35	BK 15L	38
17	60 D	60 D	40		67	45 D	35	30
18	36	37	41		68	10L	34	40
19	65 D	50 D	36		69	36	38	35
20	70 D	37	50 D		70	20	30	BK BL
21	32	35	27		71	37 D	40	40
22	36	39	27		72	35	37	36
23	40 D	40	37		73	32 OB	12L	33
24	30	25	39		74	45 D	40	BK 15L
25	38	39	34		75	BK 5G	36	40
26	35 OB	34	BK BL		76	49 D	41	BK 10L
27	33	32	38		77	41 D	33 OB	41
28	46 D	40	33		78	44 D	42	31
29	BK BL	38	25		79	43 D	36	44 OB
30	45 D	BK 5L	39		80	47 D	33	36
31	40 D	37	35		81	31	30 OB	55
32	35	35	35		82	40 D	39	12L
33	25	40	40		83	37	15L	39
34	42 D	40	BK 5L		84	33	34	32
35	36	37	40		85	45 D	33	30
36	50 D	41	36		86	35	35	35
37	34	36	40		87	BK 15L	31	34
38	50 D	49 D	41		88	41 D	40	30
39	52 D	36	40		89	35	40	BK BL
40	52 D	50 D	36		90	31	31	35
41	39	40	37		91	48 D	35	40
42	39	34	40		92	12L	BK BL	40
43	33	39	25		93	45 D	40	31
44	40 D	BK 10L	39		94	48 D	37	40
45	36	40	34		95	25	40	36
46	27	27	BK BL		96	48 D	41	40
47	41 D	40	38		97	44 D	43	BK 5G
48	35	35	33		98	49 D	36	41
49	45 D	38	40		99	43 D	44	36
50	27	BK BL	BL		100	49 D	45 OB	45

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Feb. 5, 1929.

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V. C. HARKRADER

FOOTBALL GAME

Filed March 30, 1927

24 Sheets-Sheet 20

RETURN OF PUNTS KICKED FROM PUNT FORMATION

	R 261 R 264	R 262 R 381 R 384	R 263 R 382 R 383			R 261 R 264	R 262 R 381 R 384	R 263 R 382 R 383
1	NG	NG	6		51	3	8	12
2	3	5	NG		52	5	7	20
3	5	3	10		53	NG	FBL	8
4	FBL	FBL	9		54	5	9	4
5	5	5	20		55	3	3	11
6	3	3	10		56	5	NG	10
7	5	3	FBL		57	10	5	8
8	6	5	10		58	3	9	7
9	NG	NG	7		59	7	10	11
10	15	6	5		60	11	15	11
11	3	8	10		61	3	NG	6
12	5	3	8		62	3	3	9
13	5	9	11		63	5	5	10
14	NG	7	12		64	NG	FBL	NG
15	3	9	20		65	5	8	9
16	5	NG	11		66	3	NG	10
17	3	10	18		67	5	5	3
18	5	3	18		68	5	3	10
19	5	11	12		69	3	6	FBL
20	3	11	11		70	NG	5	10
21	5	3	10		71	5	NG	8
22	3	3	9		72	FBL	7	11
23	NG	3	10		73	5	5	12
24	5	3	6		74	3	3	5
25	3	10	10		75	5	9	11
26	5	NG	9		76	NG	10	7
27	FBL	5	3		77	6	3	15
28	5	5	10		78	3	9	12
29	NG	FBL	11		79	7	10	6
30	NG	8	12		80	10	18	11
31	5	7	15		81	3	3	10
32	3	5	5		82	NG	NG	10
33	5	NG	11		83	5	5	9
34	5	9	7		84	3	4	10
35	3	5	12		85	FBL	6	20
36	11	9	18		86	5	4	10
37	NG	5	11		87	NG	5	5
38	12	9	8		88	5	NG	11
39	12	NG	25		89	5	5	11
40	3	12	15		90	3	FBL	6
41	NG	5	10		91	5	8	20
42	5	35	10		92	5	3	8
43	3	NG	6		93	NG	20	3
44	5	5	10		94	5	NG	11
45	NG	8	10		95	8	10	12
46	5	3	10		96	8	25	20
47	FBL	3	9		97	3	25	8
48	5	NG	5		98	4	10	25
49	5	6	30		99	9	20	7
50	NG	50	3		100	3	30	12

INVENTOR
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 FIG.-20
 PER Jeff and Jeff
 ATTORNEYS

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FOOTBALL GAME

24 Sheets-Sheet 21

	1 TO 5 YARD LINE	6 TO 10 YARD LINE	11 TO 13 YARD LINE	16 TO 20 YARD LINE	21 TO 25 YARD LINE	26 TO 30 YARD LINE	
1	G	G	G	G	F	G	
2	W	W	W	G	W	G	
3	A	G	20	W	W	G	
4	G	W	W	W	W	W	
5	W	A	W	W	W	W	
6	G	G	W	G	G	W	
7	W	W	G	W	W	20	
8	B	W	G	W	W	W	
9	G	W	W	A	W	B	
10	W	B	A	G	A	20	
11	G	G	G	W	G	W	
12	W	G	W	W	W	W	
13	G	W	W	W	W	W	
14	W	W	W	G	W	20	
15	A	A	B	B	B	A	
16	G	G	G	G	G	W	
17	W	W	G	W	W	W	
18	W	B	W	W	W	W	
19	G	W	W	W	W	W	
20	A	W	A	B	A	A	
21	G	W	G	G	G	20	
22	W	W	W	W	W	W	
23	G	A	W	W	W	W	
24	W	G	W	W	W	W	
25	B	G	W	B	B	A	
26	G	G	G	G	G	20	
27	W	B	G	W	W	W	
28	G	W	W	W	W	W	
29	W	W	W	W	W	W	
30	B	W	B	A	A	B	
31	G	B	G	G	G	B	
32	W	G	W	W	W	B	
33	G	W	W	W	W	W	
34	W	W	W	W	W	W	
35	B	W	B	W	W	20	
36	G	W	G	G	G	W	
37	W	G	G	W	W	W	
38	G	W	W	W	W	W	
39	W	G	W	W	W	W	
40	G	W	W	W	B	G	
41	W	G	G	G	G	W	
42	G	W	W	W	W	G	
43	W	W	W	W	W	W	
44	G	W	W	W	W	G	
45	W	G	W	W	W	W	
46	G	W	G	G	G	W	
47	W	G	G	G	W	W	
48	G	W	W	W	W	W	
49	W	G	W	B	W	W	
50	G	W	B	A	B	W	

INVENTOR

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Feb. 5, 1929.

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V. C. HARKRADER

FOOTBALL GAME

Filed March 30, 1927

24 Sheets-Sheet 22

ATTEMPTS AT FIELD GOALS
(384)

[illegible]

A - BKBL

B-BK9L

G - GOOD W - WIDE

FIG-22

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Feb. 5, 1929.

1,701,002

V. C. HARKRADER

FOOTBALL GAME

Filed March 30, 1927

24 Sheets-Sheet 24

PUNTS FROM FREE KICK; RETURN OF PUNTS FROM FREE KICK

	FLP	FSP	RFLP	RFSP			FLP	FSP	RFLP	RFSP
1	25	12	K	NG	51	30	12	3	K	
2	47	20	5	K	52	52	20	5	S	
3	42	15	6	K	53	27	15	K	NG	
4	47	22	7	NG	54	47	22	7	K	
5	27	12	3	S	55	45	12	7	K	
6	47	22	3	K	56	50	22	NG	K	
7	40	15	NG	NG	57	42	15	7	NG	
8	50	20	NG	K	58	50	20	3	K	
9	35	12	NG	K	59	32	12	7	K	
10	50	22	NG	NG	60	50	22	NG	NG	
11	37	17	K	K	61	45	17	7	K	
12	52	20	10	NG	62	50	20	3	K	
13	42	12	5	K	63	47	12	7	NG	
14	30	25	20	NG	64	55	25	NG	K	
15	50	17	3	K	65	27	17	7	NG	
16	50	12	7	K	66	50	17	3	30	
17	32	25	5	NG	67	52	12	7	K	
18	42	17	NG	K	68	55	25	NG	NG	
19	52	12	10	NG	69	45	17	10	30	
20	25	20	3	NG	70	50	12	3	K	
21	55	17	NG	K	71	55	15	20	40	
22	40	25	5	NG	72	45	20	NG	NG	
23	47	12	7	NG	73	55	15	10	40	
24	35	20	NG	10	74	30	25	20	K	
25	60	17	7	NG	75	52	17	10	NG	
26	50	25	3	NG	76	57	20	NG	50	
27	60	12	NG	NG	77	60	15	10	50	
28	37	20	7	NG	78	57	25	20	NG	
29	42	12	5	NG	79	50	15	NG	10	
30	40	25	3	K	80	57	25	20	10	
31	50	17	7	K	81	40	15	NG	NG	
32	25	20	10	K	82	45	17	3	NG	
33	57	17	NG	10	83	47	22	NG	K	
34	35	25	10	K	84	37	15	10	NG	
35	57	17	3	NG	85	47	20	10	K	
36	57	25	10	10	86	45	22	NG	25	
37	69	20	NG	K	87	30	15	10	NG	
38	50	17	10	NG	88	50	22	3	K	
39	50	25	10	10	89	45	17	NG	NG	
40	60	17	10	NG	90	47	20	20	K	
41	35	12	20	NG	91	50	15	3	20	
42	35	20	NG	K	92	37	22	K	NG	
43	42	17	3	NG	93	45	20	3	20	
44	42	12	5	K	94	47	17	NG	K	
45	42	22	NG	5	95	32	15	20	NG	
46	37	17	5	NG	96	50	22	3	K	
47	47	20	3	NG	97	45	20	3	25	
48	42	12	5	K	98	50	22	20	NG	
49	50	22	NG	K	99	40	15	K	10	
50	45	17	5	5	100	35	25	20	35	

FIG.-24

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UNITED STATES PATENT OFFICE.

VIRGIL C. HARKRADER, OF PEORIA, ILLINOIS.

FOOTBALL GAME.

Application filed March 30, 1927. Serial No. 179,420.

This invention relates to football games.

One of the objects of the invention is in the provision of a football game that is adapted to be played by opposing players or
5 opposing sides, said game being governed as to the results of play by chance, there being included, however, such possibility of selection by contestants as to formation and play as would be exactly comparable to the
10 play in a regular football game, wherein the most skillful choice of formation and play would result, under ordinary circumstances, in a win by said contestant.

Another object is in the provision of a
15 football game that may be played by contestants in exactly the same manner as a regular football game, whereby the result may be gauged almost directly by the choice of formation and play, the contestant utilizing the
20 wisest selection, under ordinary circumstances being the winner.

Still another object is in the provision of a football game that compares as to play exactly as that in a regular football game,
25 and whereby the contestants may utilize the same selection of formation and play as in a field game, the results of the play following said choice being controlled by chance.

A further object is in the provision of a
30 football game which is adapted to be played in substantially exactly the same manner as a regular football game, leaving the control of each situation in the hands of the contestants, the results of each situation follow-
35 ing a choice of formation and play being determined by the spinning of an arrow or some chance mechanism, whereby the only element of luck that enters into the game may be directly comparable with the element
40 of luck that attends each play in a regular game.

A still further object lies in the provision of a football game wherein a plurality of keys have been compiled by experts to cover
45 substantially every result that might follow the use of the combined formations and plays covered by said keys, and chance means for indicating the results of play under such key.

An additional object lies in the provision
50 of a football game wherein a plurality of keys have been compiled covering the results that would naturally follow a choice of formation and play by offense and formation by defense, said keys being compiled by football
55 experts and being the result of careful con-

sideration and comparison with football statistics.

Yet another object is in the provision of a football game that has been worked out as respects results of plays following choice
60 of formation and play in such manner that same may be instructive as well as entertaining to those skilled or unskilled in football play.

Other objects will appear in the follow-
65 ing specification taken in connection with the annexed drawings, in which—

Fig. 1 is a diagram of a football field, laid out in the manner required by the foot-
ball regulations;

Fig. 2 is a plan view of a register for in-
dicating the choice of formation and play;

Fig. 3 is a plan view of a chance dial and
indicating arrow;

Fig. 4 is an index disclosing the combina-
75 tions indicated by the register and location of keys;

Fig. 5 is an index of formations by offense
and defense, and possible selection of play;

Fig. 6 is an explanation of abbreviations
80 utilized in the keys;

Figs. 7 to 24 indicate the keys or possible
combinations that may result from a choice
by offense of formation and play and a choice
of formation by defense.

Before referring particularly to the draw-
ings, it might be stated that the present foot-
ball game differs entirely from any football
games that have apparently been devised
heretofore, in view of the fact that the pres-
ent game includes a compilation of data as
respects the possible results of play under a
given condition, said compilation forming
the results of study and comparison of a great
number of football games. This compilation of
95 results has been worked out to such a degree as to substantially eliminate the element of luck from said game to any extent other than to the extent such element of luck is evident in a
regular football game. In other words, in a
100 regular game, the element of luck enters into the result of the play. To make the point more clear, it might be said that in substan-
tially every football situation there may be
a wise selection of formation and play by of-
105 fense and a wise selection of formation by de-
fense. If there is a wise selection of forma-
tion and play by offense, and an unwise selec-
tion of defensive formation, there is obvious-
ly a greater possibility of success in the play. 110

This illustrates exactly the present football game, inasmuch as the possibility of success in the play is comparable directly with the skill in selection of formation and play as well as selection of defensive formation. The plays which have been found to be most consistent ground gainers in college football, with due regard to the opponents' defensive formation, have been worked out on the charts to give similar results. Of course, it is not known in advance what the result of a play will be, but a wise choice will place the results within a certain range of limits (keys), after which the exact result is obtained within these limits by chance upon the wheel.

The present game has been worked out for statistical data in a manner to substantially prevent the possibility of a win by a contestant utilizing an unwise selection of play, and as a matter of fact, placing a premium upon a wise selection of play and a penalty upon an unwise selection. As a matter of fact, this is exactly what happens in a regular football game, and a strong or skillful team ordinarily has an advantage over a weaker team. The only chance in an ordinary football game for a weaker team to be successful is in the choice of play, and in the present instance, there is an advantage on the part of the most skillful player. However, the element of luck enters into the present game, just as in a regular football game, inasmuch as the play is governed in this instance by the spinning of an arrow.

No one can determine the results of a play in an actual football game until same has occurred. In the present game, the spinning of the arrow determines the result of play. So far as the results of the play are concerned, there is substantially the same range of results in the present game as there would be in a regular football game. These results, as far as this game is concerned, are called keys, each key governing the results of practically all, if not all, of the situations that might arise in a football game played under existing football rules and including the change of rules as made lately.

It is apparent that the present game might be readily changed to conform to any later rules that might be made in football play.

As respects the game itself, it is not thought necessary to designate by numerals the parts of figures that appear in the drawings, inasmuch as each sheet is readily susceptible of description without the necessity of minutely describing each portion.

For instance, Fig. 1 discloses in diagram a football field 2 laid out upon a base 1. This field is laid out in the manner covered by football rules, the same being one hundred yards in length and having the regular five yard markings 5. The goal posts 3 are indicated ten yards behind the goal line 4, in accord-

ance with the late change in the rules, which in the past required the goal posts to be placed directly upon the goal lines. In this figure, there are a series of holes 7 indicating each of the hundred yards on the field, said holes being fashioned to receive some sort of a marker to indicate the position of the ball on the field during play. There are similar holes 8 upon one side of the field, which permit the insertion of some sort of marker to indicate the yards to be gained by the contestant having the ball in his possession.

Fig. 2 is a register, the whole of which is indicated by 20 of the choice of formation 9 and play 10 by the offense or side holding the ball, the choice of defensive formation 11, the quarter 12, and the number of plays 13 and 14. The discs 9—11 are shown in the upper part of Figure 2 as they appear when removed from the register. Likewise, discs 12—14 are shown in the lower part of the figure. Each is mounted on a shaft 15, and may be rotated to any desired position by the players to expose a numeral in the window 16 cut in the face of 20. This register is moved before each play to first indicate the choice of formation by offense, second, the choice of formation by defense, and third, the choice of play by offense. It will be noted on the register that the play immediately follows the formation by the offense. However, this arrangement on the register is merely to simplify the arrangement of the keys that are covered by the combination of numbers that appear on this register. In other words, that part of the register indicating the play might just as well be where the defense formation is described, but for the purpose of simplifying the keys later to be described, and arrangement thereof, the register for the key is placed second in the combination rather than third, although the choice of play comes third when the selections are made.

Before starting play, or when any quarter is finished, that part of the register indicating the quarter is moved to indicate the quarter in which the game is played, namely, 1, 2, 3, and 4. Similarly, that part of the register indicating the number of plays, the same being designated in the proper manner, is moved following the combination of each play to a new number. Conforming to football rules, the football game is played in quarters and halves, respectively as to time, or by the number of plays. For purposes of simplifying the present game, the same is played by choosing a number of plays, and this choice may be either the regulation number covered by regular football rules, or may be some arbitrary number chosen by contestants playing the game.

Fig. 3 discloses a dial 17 and spinning arrow 15 mounted on a shaft 16, said dial being marked off with numbers as at 18 up to one hundred. At the base of each number

there appears various colors as at 19. Although various colors are shown, only a minority have any actual effect upon the results of play indicated by the spinning of the arrow, and these colors indicate penalties. Obviously, the penalties arise by choice, and as a matter of fact, substantially in the same manner that they arise in a regular football game. They cannot be anticipated and usually arise when least expected or when least wanted. Further, with respect to these colors, twenty five of the hundred numbers are designated in red as at 19. In order to encourage conservative football and penalize the taking of unnecessary chances, if the arrow stops on any of these twenty-five colors, when a line plunge or end run has been attempted on the fourth down, irrespective of the result of the gain made, such gain is cut down one foot. The obvious result of this penalty would be that if a line plunge or end run were attempted on the fourth down and the offense merely made its required yardage, this yardage would be cut down one foot, and therefore the ball would go to the other side.

Again, with respect to the colors, there are two of the numbers designated in black, which penalize the offensive side when attempting either a passing play, line plunge or end run in territory between the said offensive team's own goal line and the twenty yard line. The penalty of attempting such plays when obviously the team should kick out of danger is a fumble recovered by opponent.

The purple colors penalize an offensive side five yards and the green colors penalize the defensive team five yards.

One number is designated in brown, to indicate a fifteen yard penalty on offensive side, and one in blue to indicate a fifteen yard penalty on defensive side.

There are two green and two purple colors, lying adjacent the numbers, these colors having significance only in case of a certain situation in football which may be explained as follows: Under certain circumstances, during a football game, it may be a strategic move by the defense to elect a fair catch. This is an exceptional circumstance in a game and necessitates another spinning of the dial to determine whether the catch is made. Ordinarily, of course, one spinning of the dial is sufficient for one complete play, with the exception of the kickoff, or the return of any punt. When the arrow is spun, in order to indicate the results of the fair catch, following election thereof, if the arrow stops on one of the green or purple colors, this signifies that a fumble has been made by the defensive man receiving the kick, but that said man attempting the catch recovered the ball. It might be stated also that if the arrow stopped on the black number, this would sig-

nify that a fumble had been recovered by the kicking team. In either case, however, play is carried on as if no fair catch was signalled for, that is, of course, in case the arrow should have stopped at either of these penalizing numbers.

Fig. 4 is an index, disclosing the combinations indicated by the register, and the page, or place, in an accompanying pamphlet in which the keys are located. Fig. 4 also has disposed below the index the location of keys covering free kicks, there being some situations which merely call for a single choice of play by the offensive team, and thereafter the spinning of the arrow to indicate the results. These occasions are covered by this index, the same all relating to kicks which are made from formations indicated therein.

Fig. 5 is an index of possible formations by offense, formations by defense and plays by offense. These formations and plays cover generally all formations and plays known at this time, and coming within the present football rules. It is obvious, however, that these formations and plays might readily be changed, either now, or later, to accord with any change in football rules.

It might be well to state that in this description of applicant's present football game, it is assumed that the game of football is so well known, also the rules governing same, as to obviate any necessity of discoursing on same to any extent whatsoever. It is possible that the layman might not have a detail knowledge of all of the possible plays, but the present game is devised to permit a player having any knowledge whatsoever of football to play same and to increase his knowledge of the game during such play. The game contemplates substantially all, if not all, of the situations that might arise under football rules, and is therefore adapted to be played by either football experts or by any ordinary player.

Fig. 6 is an explanation of abbreviations utilized in the keys. It is not thought necessary to go into a detailed description of these abbreviations as they are obvious, and in case there is an abbreviation in one of the keys, it is merely necessary for the player to turn to this list of abbreviations in order to find just what same means. It may be assumed that a contestant, after playing for a short time, will soon commit these abbreviations to memory.

Figs. 7 to 24 inclusive indicate the keys, which are the results of the combinations indicated by the register, said keys determining the possible result of every distinct situation that would arise following the selection of play.

With respect to the manner of playing the game, there may either be two sides composed of one player on either side, or perhaps better, two sides with others acting as officials

in exactly the same manner as regular football is played, and in the manner covered by football rules. When sides have been chosen, and the number of plays for the full game have been decided upon the contestants, either by chance or by agreement, decide who will kick off, this being the first play in the football game. The kick is made under regulation football rules, from the kicker's own forty yard line. The arrow is then spun to indicate the result of the kick-off. The kick-off does not count for a complete single play, but it is necessary to spin the arrow again, in order to determine either how far the ball was returned after the kick-off or more specifically, the result of play following the receiving of the kick. The kick-off and receiving of the kick count as one play and are so indicated on the register indicating the number of plays.

It is apparent, also, that the kicker, who was the offense for one play, thereafter becomes the defending side and the side receiving the kick becomes the offense. Play is then resumed and the selection of plays is made in the manner before described, and the results indicated also in the manner described.

Before describing the actual play, as contemplated by this game, it might be well to reiterate that the present game differs from other football games, in that there is a possibility of selection, or judgment by either side, irrespective of the situation, in just exactly the same manner as there would be in an ordinary football game, the result of play being merely left to chance, as it would be in a regular football game. For instance, in case of a deliberate safety, which is contemplated by the football rules, the offensive side can call for a deliberate safety and register the desired number of plays before the safety, so long as he does not exceed the number of plays to which he is entitled in that sequence of downs. Further, in case of forward passes, where the result indicated by the keys, following a spinning of the arrow, shows same to have been intercepted, the defense contestant may decline interception and have the play treated as an incompleting pass, if he so desires. Still further, respecting this possibility of selection that might arise under any football situation, in case of penalties, there is the option, under certain circumstances, of accepting the penalty or accepting the gain.

Applicant feels that with the above description, and with the complete disclosure in the drawings, anyone having even a slight knowledge of football, might readily play in an intelligent manner the present game. As a matter of fact, after completing but a few plays, it will be found that the actual play is very simple as well as very enjoyable and instructive. However, to even more fully

explain the operation of the game, one quarter will be described in exactly the same manner as same would be played by two contestants, which will be designated A and B. It is thought that the description of play of one quarter will suffice, as the other quarters would be played in the same manner. As stated before, any number of plays might be agreed upon between the contestants, irrespective of football rules.

Before the kick-off is made, the dial on the indicator marked "Quarter" is moved in such manner that the numeral 1 appears, and the dials containing the markings "Formation", "Play", and "Defense" are prepared for movement as soon as the play is called.

In the first instance, the arrow is spun for the kick-off by contestant B, coming to a stop at numeral 8. Thereupon, turning to the key governing the kick-off, it is found that the numeral 8 indicates that the ball has traveled forty-five yards from the contestant B's forty yard line, from which point the kick-off was made. The ball is received upon the fifteen yard line of contestant A, whereupon the arrow is spun by A, in order to determine the number of yards that the ball is returned by said contestant.

The kick-off and return of the kick is indicated as one play, and therefore the dial on the indicator referring to the number of plays is moved so that the numeral 1 appears, indicating that one play has been made.

Upon the spinning of the arrow by contestant A, it is found that the arrow points to numeral 28, and referring to the key for the return of the kick-off, it is found that numeral 28 indicates that the ball was returned by contestant A five yards, whereupon the ball is put in scrimmage by contestant A, on his twenty yard line.

The ball is now in contestant A's possession, and he chooses formation 1, contestant B chooses defense formation 2, and contestant A chooses play No. 1. When these selections are duly registered (see Fig. 2), the indicator discs 9, 10 and 11 shows a combination of 112. The arrow is now spun by contestant A and stops at the numeral 47, whereupon, upon consulting key 112, it is found that numeral 47 indicates that there was no gain, the ball therefore remaining in the possession of contestant A on the twenty yard line, it being second down and still ten yards to go. The dials on the indicator are again moved to indicate that two plays have been completed.

Contestant A now chooses formation No. 1, contestant B chooses defense formation No. 2 and contestant A chooses play No. 1. When these selections are duly registered, the indicator shows the combination 112, whereupon the arrow is spun, stopping at numeral 68. Key 112 is then referred to and numeral 68 is found to indicate that a gain of ten yards was made.

It will be noted that numeral sixty eight also indicates a color hazard, the color being green, and by turning to the key for the color hazards (see Fig. 6), it will be found that a five yard penalty was inflicted on the defensive team. By his play, contestant A made a gain of ten yards, and because of the color hazard, a five yard penalty was inflicted on contestant B, therefore there remains the option to contestant A to choose either the penalty or the results of the play, and in this instance, of course, the result of the play is taken, and the ball is now on the thirty yard line in the possession of contestant A, ten yards having been made, and it now being first down and ten yards to go. The indicator is moved to indicate that three plays have been completed.

Contestant A again chooses offensive formation 1, contestant B chooses defense formation 1 and contestant A play 2. When these selections have been duly registered, the indicator shows that the combination for the play is 121. The arrow is spun, stopping at numeral 58, and upon referring to the key, it is found that numeral 58 indicates that one yard was lost. The ball is moved back to the twenty nine yard line in the territory of contestant B, and the indicator is moved to show that four plays have been made.

It being second down and 11 yards to go, contestant A chooses formation 2, contestant B chooses defense 2 and contestant A play 2, or an end run. When these selections have been duly registered upon the indicator, they show the combination 222. The arrow is spun by contestant A and same stops at numeral 92. Turning to the key 222, it is found that a twenty five yard gain was made. The ball is now in the possession of contestant A on contestant B's forty six yard line, it being again first down and ten yards to go. The number of plays now registered is five.

Contestant A now chooses formation 2, contestant B defense formation 1, and contestant B play No. 2. When these selections have been registered on the indicator, they show the combination 221. The arrow is spun and stops at numeral 38. Turning to key 221, it is noted that numeral 38 indicates a twelve yard gain, whereupon the ball is moved to B's thirty four yard line, it being again first down and ten yards to go. The register is changed to indicate that six plays have been made.

Contestant A chooses formation 1, contestant B uses defense 1, and contestant A play 2, or an end run. These selections having been made, the indicator registers combination 121. The arrow is spun, stops at numeral 36, and turning to the key 121, it is found that numeral 36 indicates that a one yard gain was made, the ball now being on B's thirty three yard line, it being second down and nine yards to go. The register is

turned to indicate that seven plays have been made.

Contestant A now chooses formation 1, contestant B defense 1 and contestant A play 1. When these selections have been duly registered, the indicator shows the combination to be 111, and the arrow is spun, stopping at numeral 58. Turning to key 111, it is found that numeral 58 indicates a twelve yard gain, whereupon the ball is moved to B's twenty one yard line, it being first down and ten yards to go. The register is changed to indicate that eight plays have been completed.

Contestant A now chooses formation 1, contestant B defense 1, and contestant A again depends upon play 1, or a line plunge. This selection still shows combination 111 and the arrow is spun, stopping at numeral 77. Turning to key 111, it is found that numeral 77 indicates no gain. It is now second down and still ten yards to go, the register having been changed to indicate that nine plays have been made.

Contestant A, finding that the line plunge has not resulted in gain, chooses formation 2, contestant B defense 1, and contestant A play 4, or medium length pass. When these selections have been registered, the indicator shows combination 241, the arrow is spun and stops at numeral 14. When key 241 has been referred to, it is found that numeral 14 indicates a completed pass of thirteen yards, after which the receiver runs for an additional three yards, making in all, a sixteen yard gain. The ball is now on B's five yard line, it being first down and goal to go. The second dial indicating the number of plays is moved to show that ten plays have been completed.

Contestant A now chooses formation 1, contestant B defense 4, and A play No. 1. When these selections have been duly registered, the indicator shows combination 114. The arrow is now spun and stops at 12, whereupon key 114 is referred to and it is found that numeral 12 indicates no gain. It is now second down and goal to go. The play register is moved to indicate eleven completed plays.

Contestant A again chooses formation 1, B defense 4 and A line plunge or play 1. The same combination 114 appears on the register, and the arrow is spun, stopping at numeral 21. Upon referring to key 114, it is found that numeral 21 indicates a one yard gain. The ball is now on B's four yard line, it being three down and goal to gain. The register indicates twelve plays completed.

Contestant A, still believing that a line plunge will result in a touchdown, again chooses formation 1, contestant B defense 4 and contestant A play 1, or a line plunge. The same combination 114, is again registered, and when the arrow is spun, it stops at numeral 45, whereupon, referring to key

114, it is found that numeral 45 indicates a two yard gain, the ball now being on B's two yard line, it being fourth down and goal to gain. The register is now turned to indicate that thirteen plays have been completed.

Inasmuch as it is fourth down and two yards to go, and contestant A, finding that line plunges are apparently ineffective, now chooses formation 1, B chooses defense formation 4 and A chooses play 3, or short pass from three to eight yards. When these selections have been duly registered, the indicator shows the play combination to be 134. The arrow is spun, stopping at numeral 50, and turning to key 134B, it is found that numeral 50 indicates an incompleting pass of four yards, the ball going over the goal line. The ball is now brought out to the twenty yard line in compliance with the rules governing a touchdown, and placed in scrimmage by contestant B, who now assumes the offensive. The register is then turned to indicate that fourteen plays have been completed.

Contestant B chooses formation 2, A chooses defense formation 2 and B play 2. When these selections have been duly registered, the indicator shows combination 222. The arrow is spun, stopping at numeral 4, and when 222 is consulted it is found that numeral 4 indicates no gain, the ball remaining on the twenty yard line in possession of contestant B, it being second down and ten yards to go. The register is duly moved to indicate fifteen completed plays.

Contestant B now chooses formation 2, contestant A defense formation 2 and B play 5. When these selections have been duly registered, the indicator shows combination 252. The arrow having been spun and stopping at 68, key 252 is consulted, and it is found that numeral 68 indicates that a pass of thirty five yards was intercepted and that the interceptor ran fifteen yards in the direction of its opponent's goal. This places the ball in the possession of contestant A on B's forty yard line. The ball is now placed in scrimmage by A, it being first down and ten yards to go. The register is moved to indicate that sixteen plays have been completed.

Contestant A chooses formation 1, B chooses defense formation 1 and A chooses play 5, the same being a long pass. When the selections have been duly registered, the indicator shows a combination of 151. The arrow is now spun, stopping at 5. When the key 151 is referred to, it is found that numeral 5 indicates a completed pass of thirty five yards. The ball is now in A's possession on B's five yard line, it being first down and goal to gain. The register is now changed to indicate seventeen completed plays.

Contestant A now chooses formation 1, B defense formation 4 and A play 1, which selections, when duly registered, show on the indicator the combination 114. The arrow

is spun, stopping at numeral 60. Upon referring to key 141, numeral 60 is found to indicate a six yard gain, and therefore a touchdown. The register is now changed to indicate eighteen completed plays.

In conformity with the official football rules, the ball is brought out to the three yard line and contestant A now has the option of kicking from the three yard line through the goal posts, which are located ten yards beyond the goal line, or of rushing the ball by any play he chooses over the goal line, the same being three yards away. In this instance, the contestant A chooses formation 3, B defense formation 4 and A a place kick, or play No. 8.

When these selections have been duly registered, the indicator shows combination 384. When the arrow has been spun, it stops at numeral 81, and when key 384, for kicks made from one to five yard line, is referred to, it is found that the kick was successful, the score now being 7 to nothing in favor of contestant A. The register is now changed to indicate that nineteen plays have been completed.

B now has his choice of kicking or receiving, and in this instance chooses to kick. The ball is placed on B's forty yard line, the arrow spun, stopping at 1, and upon reference to the key, it is found that a sixty five yard kick has been made, carrying the ball over the goal line. It is therefore optional on the part of A whether the ball shall be brought out and put into play on the twenty yard line or whether he shall attempt to run it back. In this case he downs the ball behind his goal line. The register is now turned to indicate that twenty plays have been made.

What I claim is:

1. A foot ball game comprising a plurality of keys covering results compiled from statistical data and with due regard to averages and hazards of plays that might be attempted under foot ball rules, a register for arriving at the combination disclosing the proper key, said register recording the choice of offense formation, the choice of defense formation and the play by offense, and means controlling by chance the results of each play.

2. A foot ball game comprising a plurality of keys covering possible results of plays that might be attempted under foot ball rules, an indicator showing the choice of formation and play by offense and the formation by defense, thereby registering the proper key showing possible results of play and a dial controlling by chance the results of play.

3. A foot ball game comprising a plurality of keys covering results of plays that might be attempted under foot ball rules, an indicator showing choice of formation and play by offense and formation by defense, means controlling by chance the results of each play as

same may appear under the proper key and a diagram laid off to represent a foot ball field.

4. A foot ball game comprising a plurality of keys covering the possible results of plays that might be attempted from any formation or situation under foot ball rules, and means for arriving at the proper key following a choice of formation and play by offense and a choice of formation by defense.

5. A foot ball game comprising a plurality of keys covering the results of plays that might be attempted from any formation or situation under foot ball rules, means for arriving at the proper key following a choice of play by the offense and choice of play by the defense, and chance mechanism indicating the result of play covered by the indicated key.

6. A foot ball game comprising a plurality of keys covering the results of plays that might be attempted from any formation or situation under foot ball rules, means for arriving at the proper key following choice of formation and play by offense, chance mechanism indicating the result of play covered by the indicated key and a diagram of a foot ball field, including means for indicating the position of the ball thereon at all times.

7. A foot ball game including a plurality of keys covering the results of plays that might be attempted from any formation or situation under foot ball rules, an indicator registering the choice of formation and play by offense, chance mechanism indicating the result of play covered by said key, said chance mechanism including means for indicating possible penalties.

8. A foot ball game including a plurality of keys covering the results of plays that might be attempted from any formation or situation under foot ball rules, a register indicating the proper key following a choice

of formation and play, an index for quickly finding said key, chance mechanism controlling the results of said play as indicated by the proper key, and a diagram of a foot ball field, including means for indicating the position of the ball at all times.

9. A foot ball game comprising a plurality of keys covering the results of plays that might be attempted from any formation or situation under foot ball rules, means for indicating possible formations and plays, means for registering the combinations of formation and play, chance means for controlling the results of play under such combination and an index for quickly finding the proper key disclosing the results of play as indicated by the chance mechanism.

10. A foot ball game comprising a plurality of keys covering the results of plays that might be attempted from any formation or situation under foot ball rules, and a register for arriving at the proper key following a choice of formation and play, said register including a dial indicating the formation chosen by offense, a second dial indicating the formation chosen by defense and a third dial indicating the choice of play by offense.

11. A foot ball game comprising a plurality of keys covering the results of plays that might be attempted from any formation or situation under foot ball rules, a register for arriving at the proper key following the choice of formation and play, said register including a plurality of dials designated in such manner as to produce a combination covering each formation and play, chance means controlling the results of each play and a diagram of a foot ball field including means thereon for indicating the position of the ball at all times.

In testimony whereof, I have hereunto affixed my signature.

VIRGIL C. HARKRADER.