United States Patent

Alexander, Jr.

[15] **3,655,189**

[45] **Apr. 11, 1972**

[54] AUTOMATIC ELECTRIC BASEBALL GAME

[72] Inventor: **Delbert S. Alexander, Jr.**, Evanston, Ill.

[73] Assignee: **State National Bank**, Evanston, Ill.

[22] Filed: **June 22, 1970**

[21] Appl. No.: **48,505**

Related U.S. Application Data

[63] Continuation of Ser. No. 683,885, Nov. 17, 1967, abandoned.

[52] **U.S. Cl.** **273/88**

[51] **Int. Cl.** **A63f 9/00**

[58] **Field of Search** 273/88, 89, 83

[56] **References Cited**

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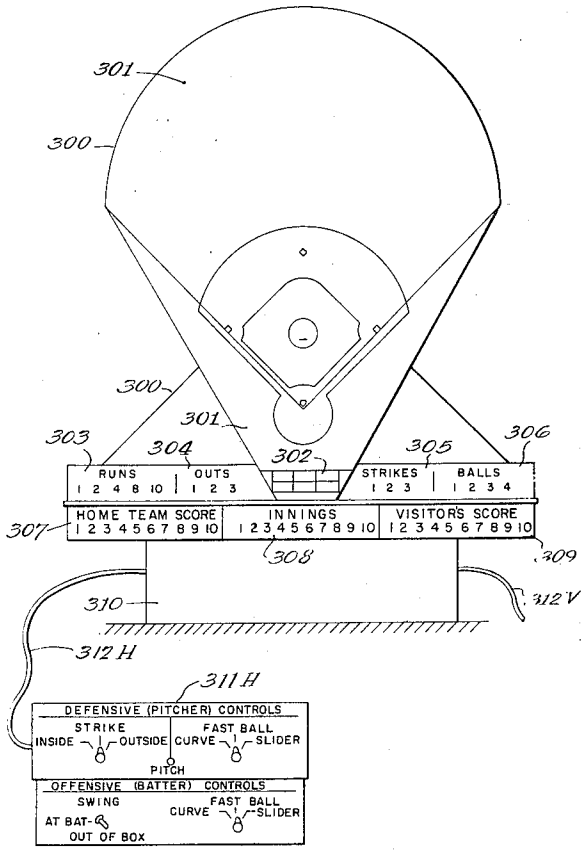
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Attorney—Hofgren, Wegner, Allen, Stellman & McCord

[57] **ABSTRACT**

A baseball game apparatus includes a defensive control unit with pitch selection switches manually controlled by a player serving as pitcher, and an offensive control unit with pitch anticipation switches on which a player serving as batter selects and swings at or passes an anticipated pitch. A mixer stepping unit randomly selects the resulting play from a category of plays determined by the degree of correspondence between the defensive and offensive pitch switches. The selected play controls sequential energization of a series of lights under a translucent playing field to simulate the movement of a batted all. A player stepping unit energizes a further series of lights to animate men which converge towards the batted ball flight path. A base running relay energizes lights arranged in a diamond-shaped pattern to animate runners advancing around a base path. Interlocking relays allow one runner to be held on a base while another runner advances. A motor driven play animation unit energizes further series of lights to simulate the ball being returned to the infield. A plurality of stepping relays records the progress of the game, and in response to predetermined positions, such as third out, control energization of the relays and lights to modify the game condition then being displayed.

15 Claims, 20 Drawing Figures



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14 Sheets-Sheet 1

Fig. 1

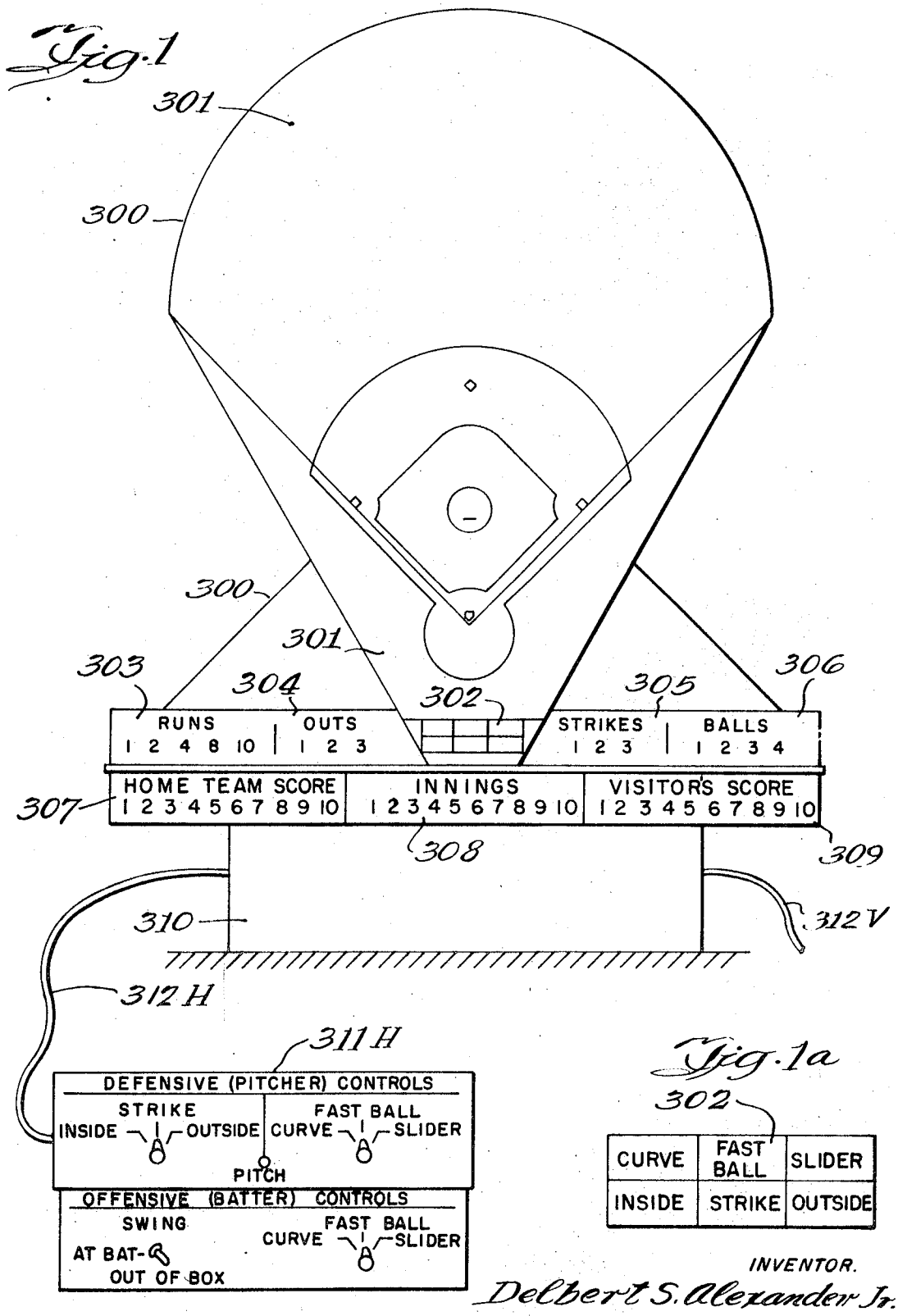


Fig. 1a

302

CURVE	FAST BALL	SLIDER
INSIDE	STRIKE	OUTSIDE

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Delbert S. Alexander Jr.
BY Hoffman, Wagner, Allen, Stellman & McCord
ATTORNEYS.

Fig. 2

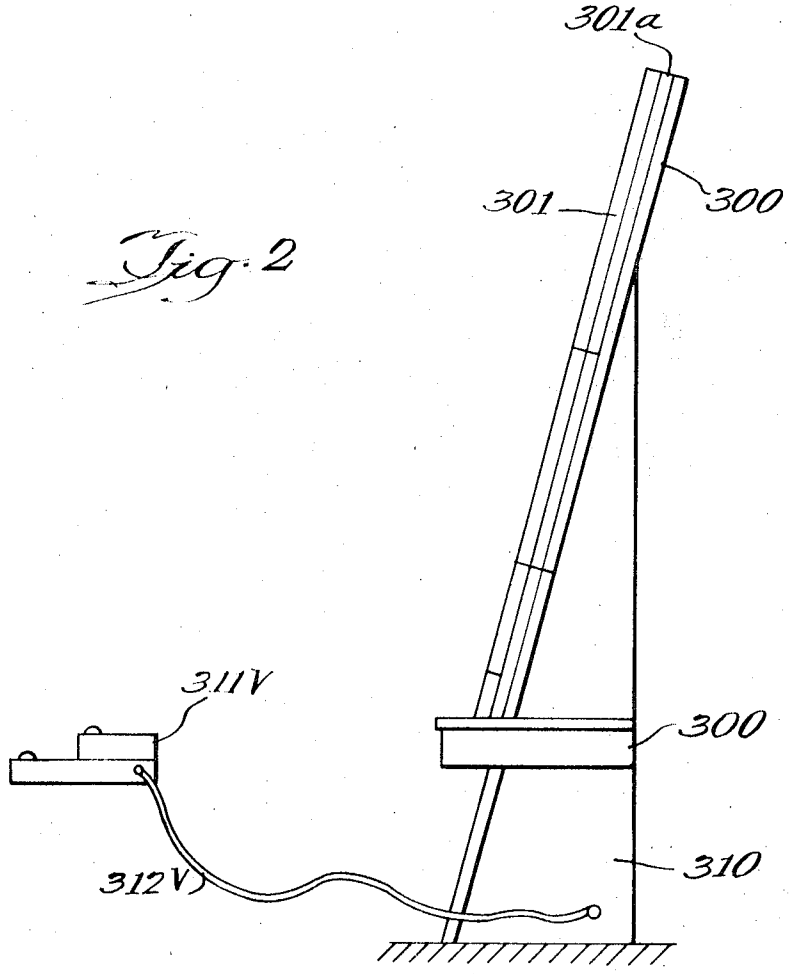


Fig. 3

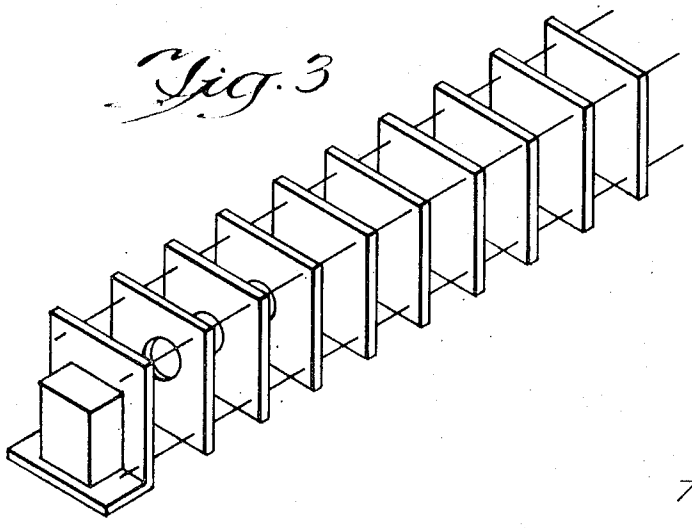
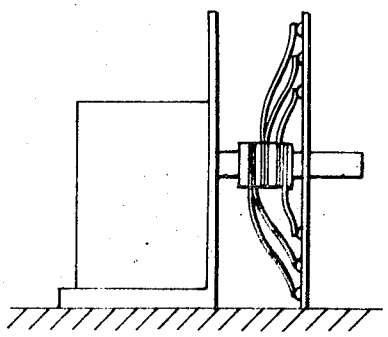


Fig. 4



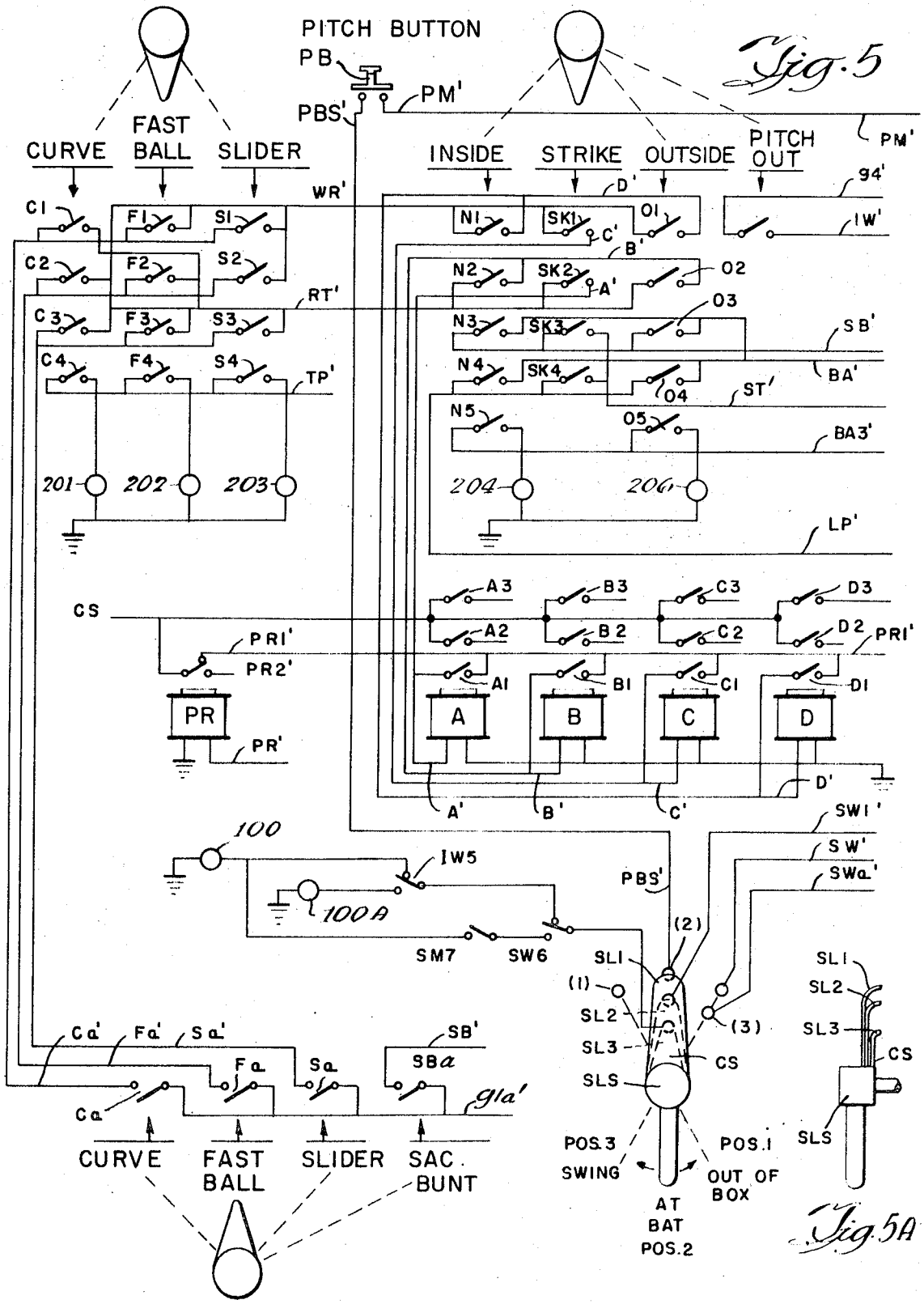

PITCH BUTTON
PB
PBS'
PM'
CURVE
FAST BALL
SLIDER
INSIDE
STRIKE
OUTSIDE
PITCH OUT
WR'
RT'
TP'
SB'
BA'
BA3'
ST'
LP'
CS
PRI'
PR2'
PR
PR'
100
100A
IW5
SM7
SW6
SW1'
SW'
SWa'
SB'
SBa
CURVE
FAST BALL
SLIDER
SAC. BUNT
SWING
OUT OF BOX
AT BAT POS.2
POS.1
POS.3

Fig. 5

Fig. 5A

Fig. 6

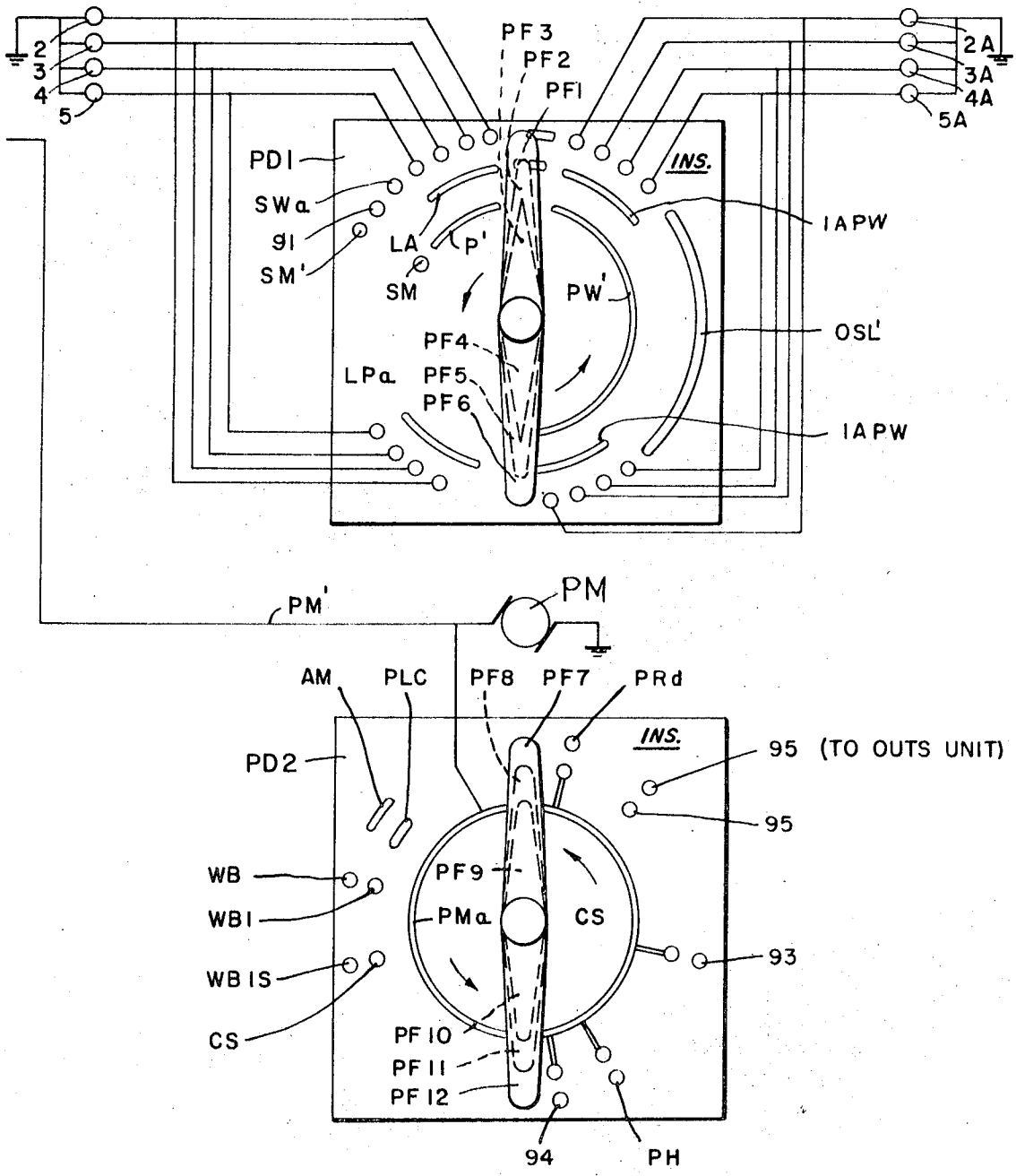
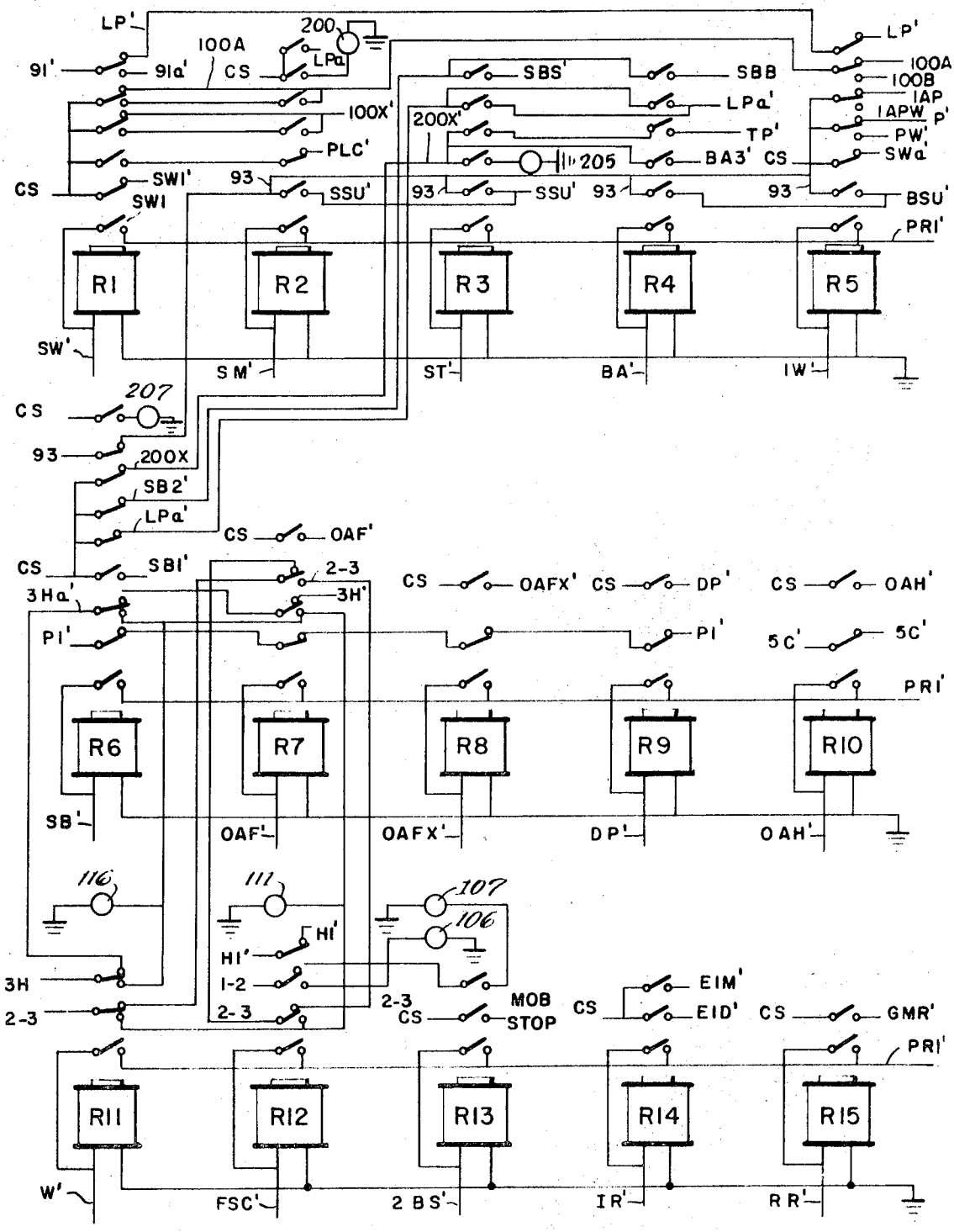
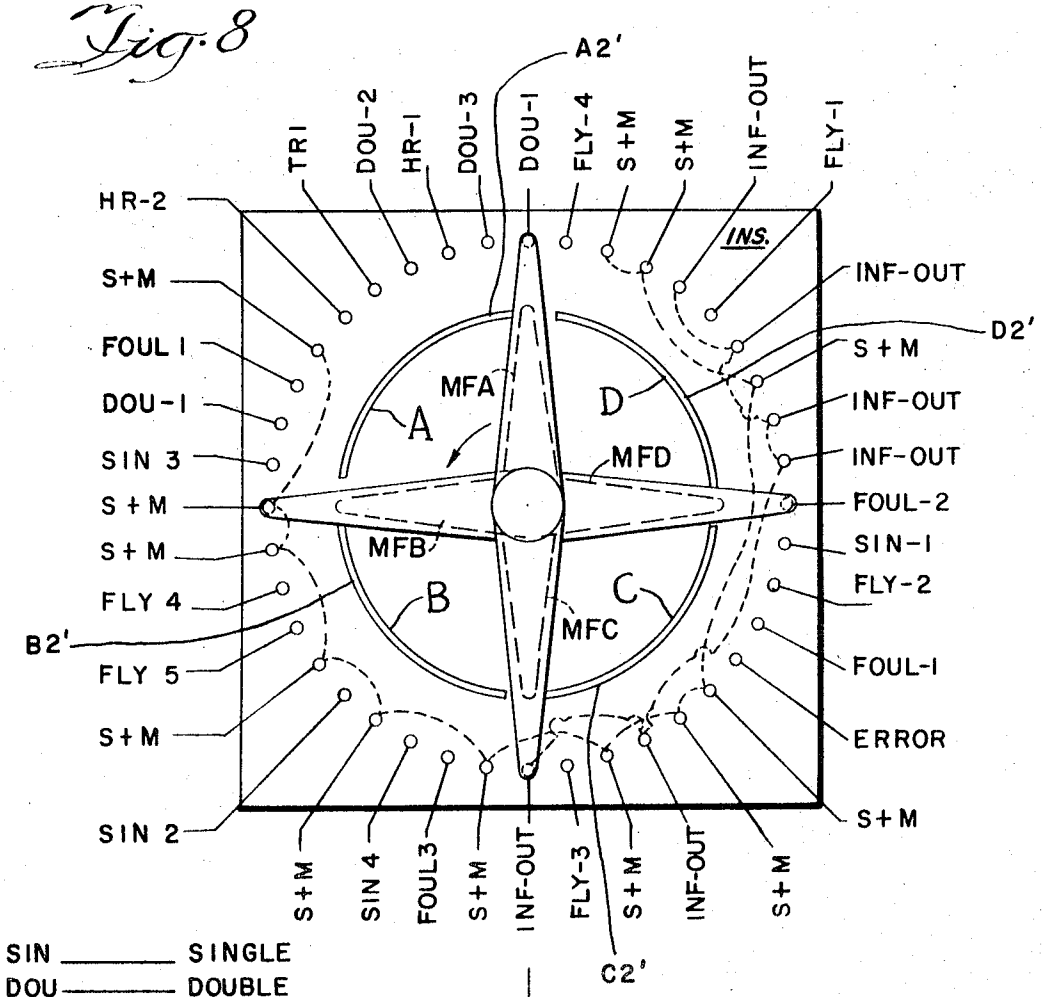

2
3
4
5
PF3
PF2
PF1
2A
3A
4A
5A
PD1
SWa
91
SM'
LA
P'
SM
PW'
INS.
IAPW
OSL'
PF4
LPa
PF5
PF6
IAPW
PM'
PM
AM
PLC
PF8
PF7
PRd
INS.
95 (TO OUTS UNIT)
PD2
95
WB
WB1
WB1S
CS
PF9
PMa
CS
93
PF10
PF11
PF12
94
PH

Fig. 7 PLAY CONTROL RELAYS-PCR



MIXER STEPPING UNIT DISC - I

Fig. 8



SIN ——— SINGLE
DOU ——— DOUBLE
TRI ——— TRIPLE
HR ——— HOME-RUN
FLY ——— FLY-OUT
S+M ——— SWING+MISSED
INF-OUT ——— INFIELD-OUT

INF-OUTa (TO DISC-205-FIG. 9)

INF-OUT b (TO OUTS STEPPING RELAY FIG. 13)

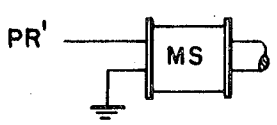


Fig. 8A

PLAY ANIMATION DISC S

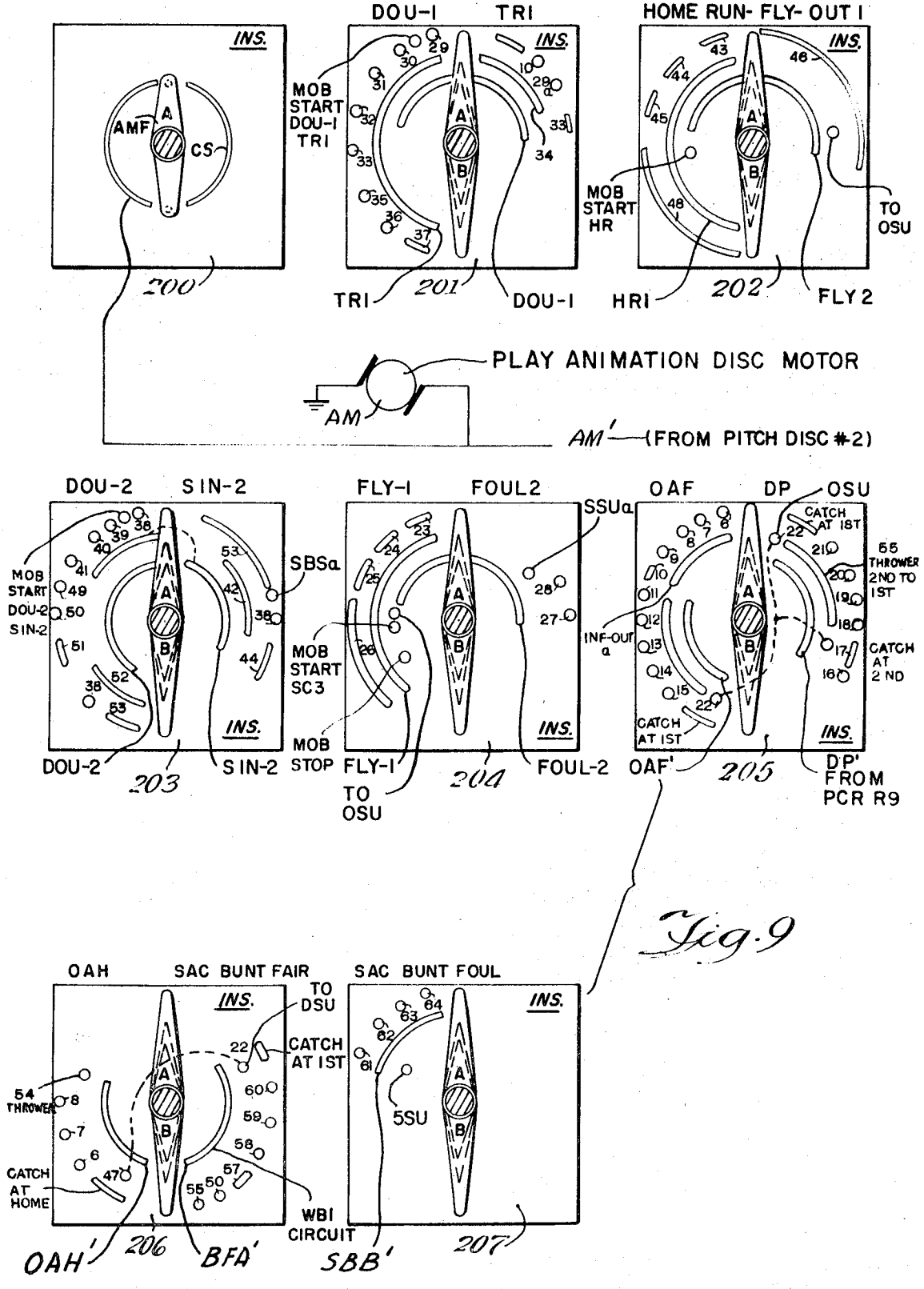


Fig. 9

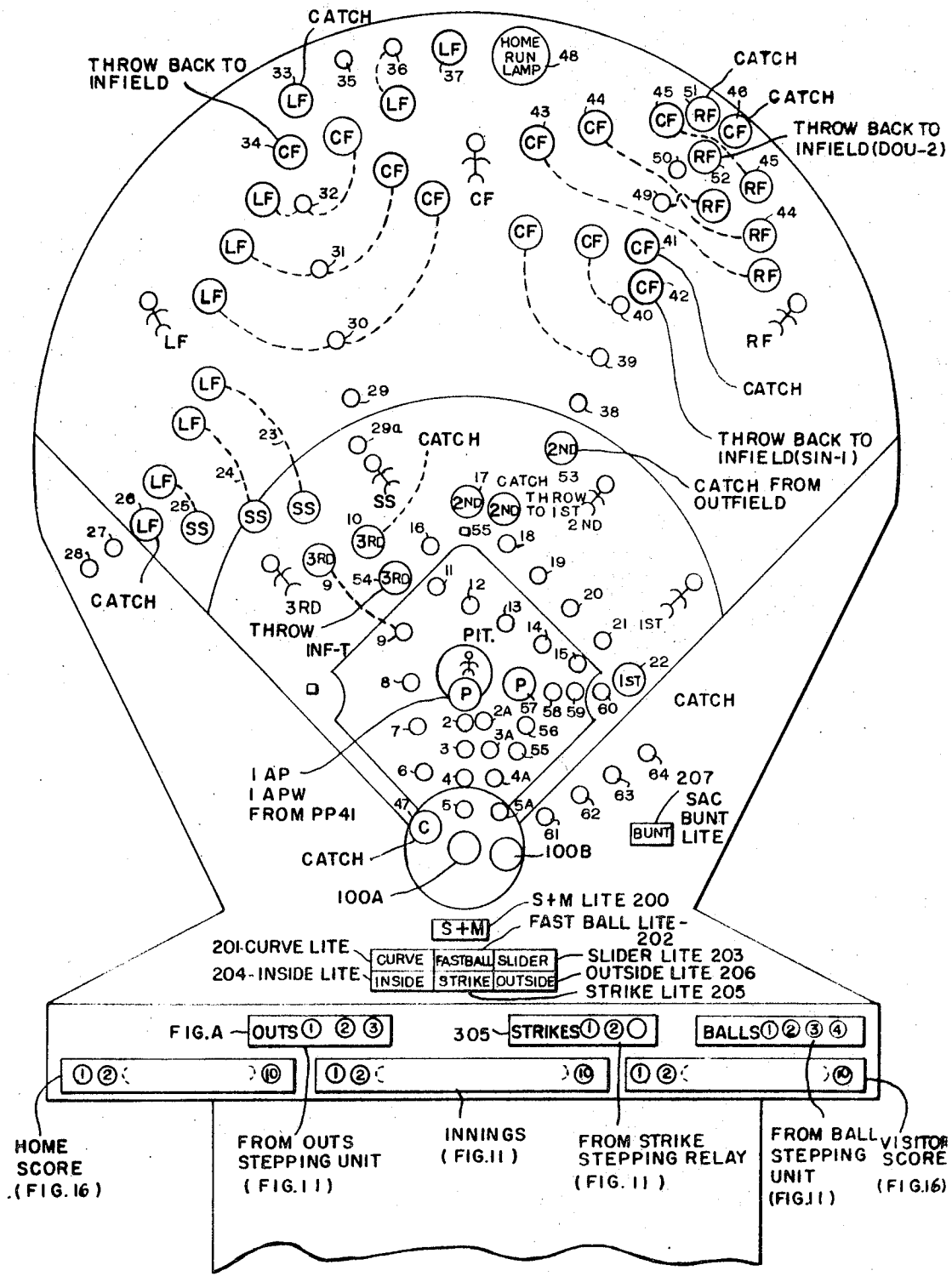
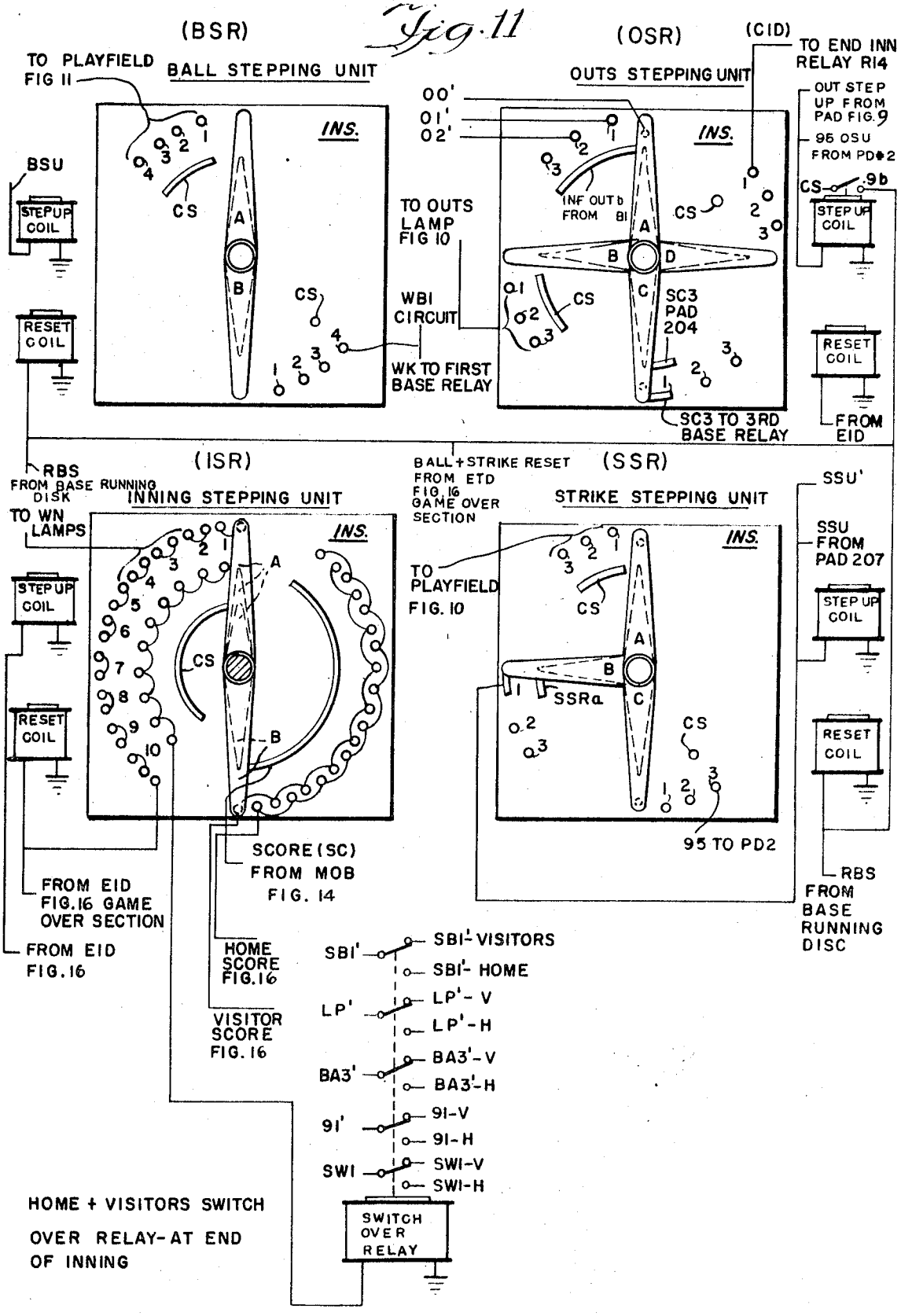

CATCH
THROW BACK TO INFIELD
HOME RUN LAMP
CATCH
CATCH
THROW BACK TO INFIELD(DOU-2)
CF
LF
RF
SS
2ND
3RD
1ST
P
C
CATCH
THROW BACK TO INFIELD(SIN-I)
CATCH FROM OUTFIELD
THROW TO 1ST
2 ND
3RD
THROW INF-T
PIT.
1AP
1APW FROM PP41
CATCH
100A
100B
207
SAC BUNT LITE
BUNT
S+M
S+M LITE 200
FAST BALL LITE-202
201-CURVE LITE
204-INSIDE LITE
CURVE
FASTBALL
SLIDER
INSIDE
STRIKE
OUTSIDE
SLIDER LITE 203
OUTSIDE LITE 206
STRIKE LITE 205
FIG.A
OUTS
305
STRIKES
BALLS
HOME SCORE (FIG.16)
FROM OUTS STEPPING UNIT (FIG.11)
INNINGS (FIG.11)
FROM STRIKE STEPPING RELAY (FIG.11)
FROM BALL STEPPING UNIT (FIG.11)
VISITOR SCORE (FIG.16)

Fig. 10

Fig. 11


(BSR)
BALL STEPPING UNIT
TO PLAYFIELD FIG 11
BSU
STEP UP COIL
RESET COIL
INS.
CS
A
B
TO OUTS LAMP FIG 10
WBI CIRCUIT
WK TO FIRST BASE RELAY
(OSR)
OUTS STEPPING UNIT
00'
01'
02'
INF OUT b FROM BI
SC3 PAD 204
SC3 TO 3RD BASE RELAY
(CID)
TO END INN RELAY RI4
OUT STEP UP FROM PAD FIG. 9
95 OSU FROM PD#2
9b
FROM EID
(ISR)
INNING STEPPING UNIT
RBS FROM BASE RUNNING DISK
TO WN LAMPS
SCORE (SC) FROM MOB FIG. 14
FROM EID FIG. 16 GAME OVER SECTION
FROM EID FIG. 16
HOME SCORE FIG. 16
VISITOR SCORE FIG. 16
BALL + STRIKE RESET FROM ETD FIG. 16 GAME OVER SECTION
(SSR)
STRIKE STEPPING UNIT
TO PLAYFIELD FIG. 10
SSRa
95 TO PD2
SSU'
SSU FROM PAD 207
RBS FROM BASE RUNNING DISC
SBI'
SBI'- VISITORS
SBI'- HOME
LP'
LP'- V
LP'- H
BA3'
BA3'- V
BA3'- H
91'
91- V
91- H
SWI
SWI- V
SWI- H
SWITCH OVER RELAY
HOME + VISITORS SWITCH OVER RELAY- AT END OF INNING

MIXER STEPPING UNIT DISC-2

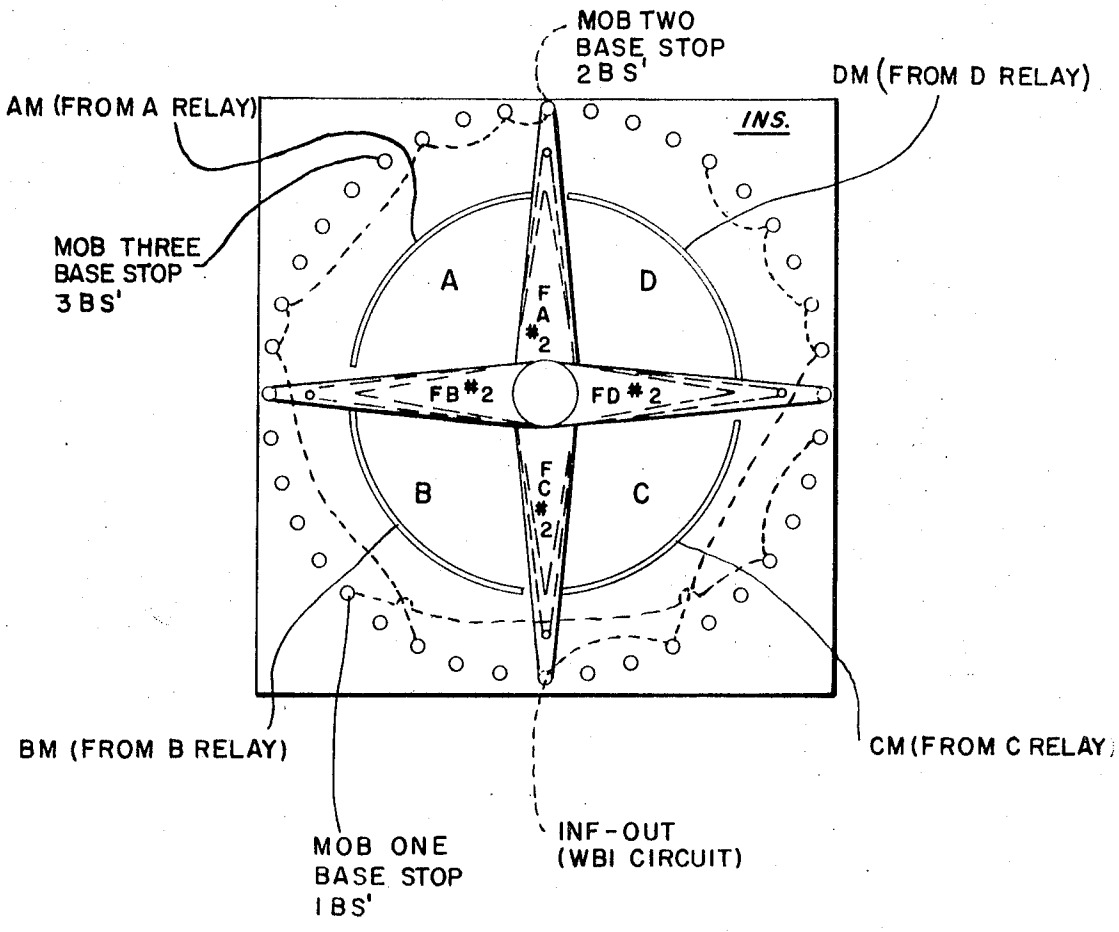
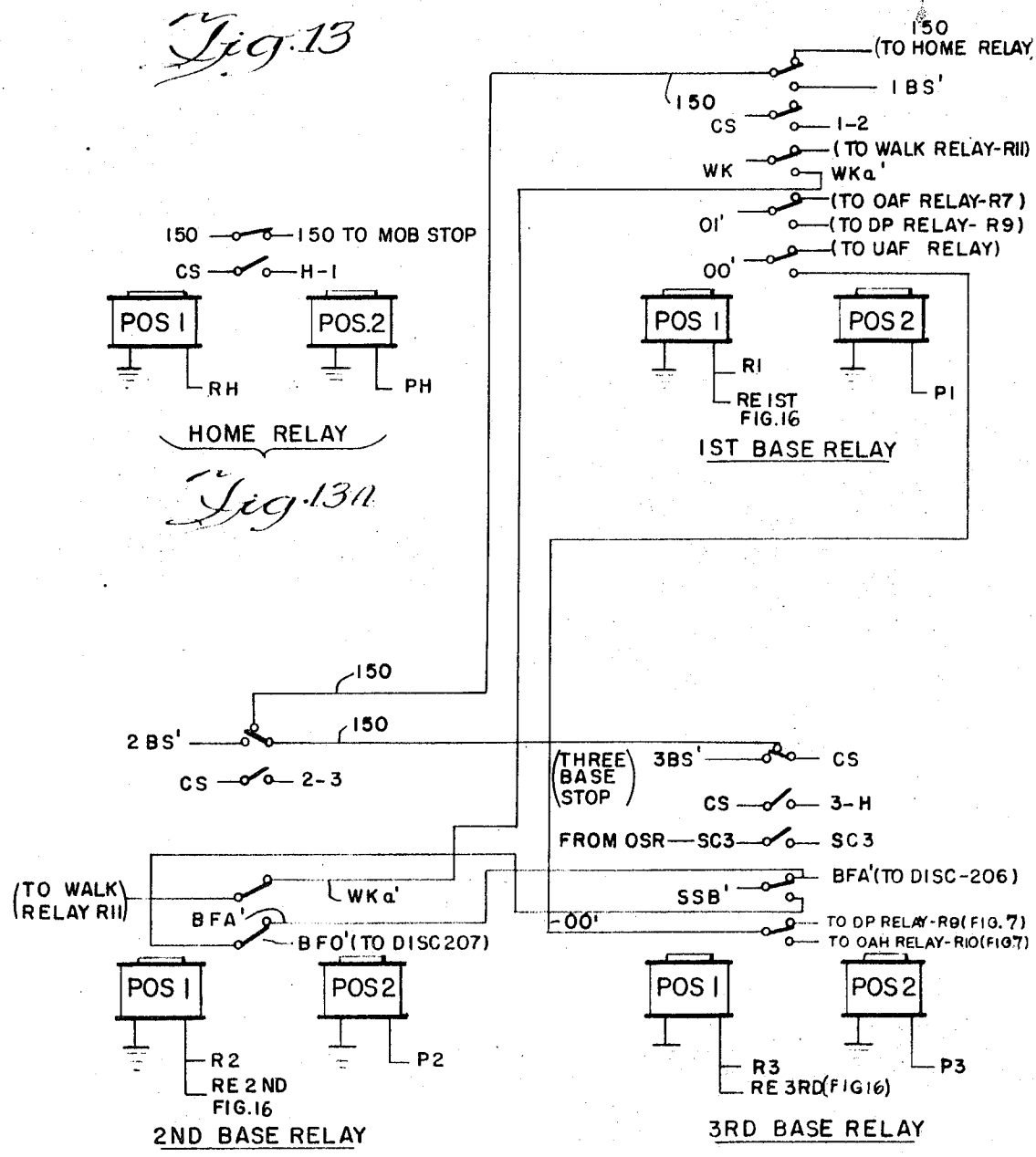


Fig. 12

MEN ON BASE INTERLOCKING TYPE RELAYS-MOB

Fig. 13



POS 1-NO BASERUNNER OCCUPYING BASE

POS 2-BASERUNNER IS OCCUPYING BASE

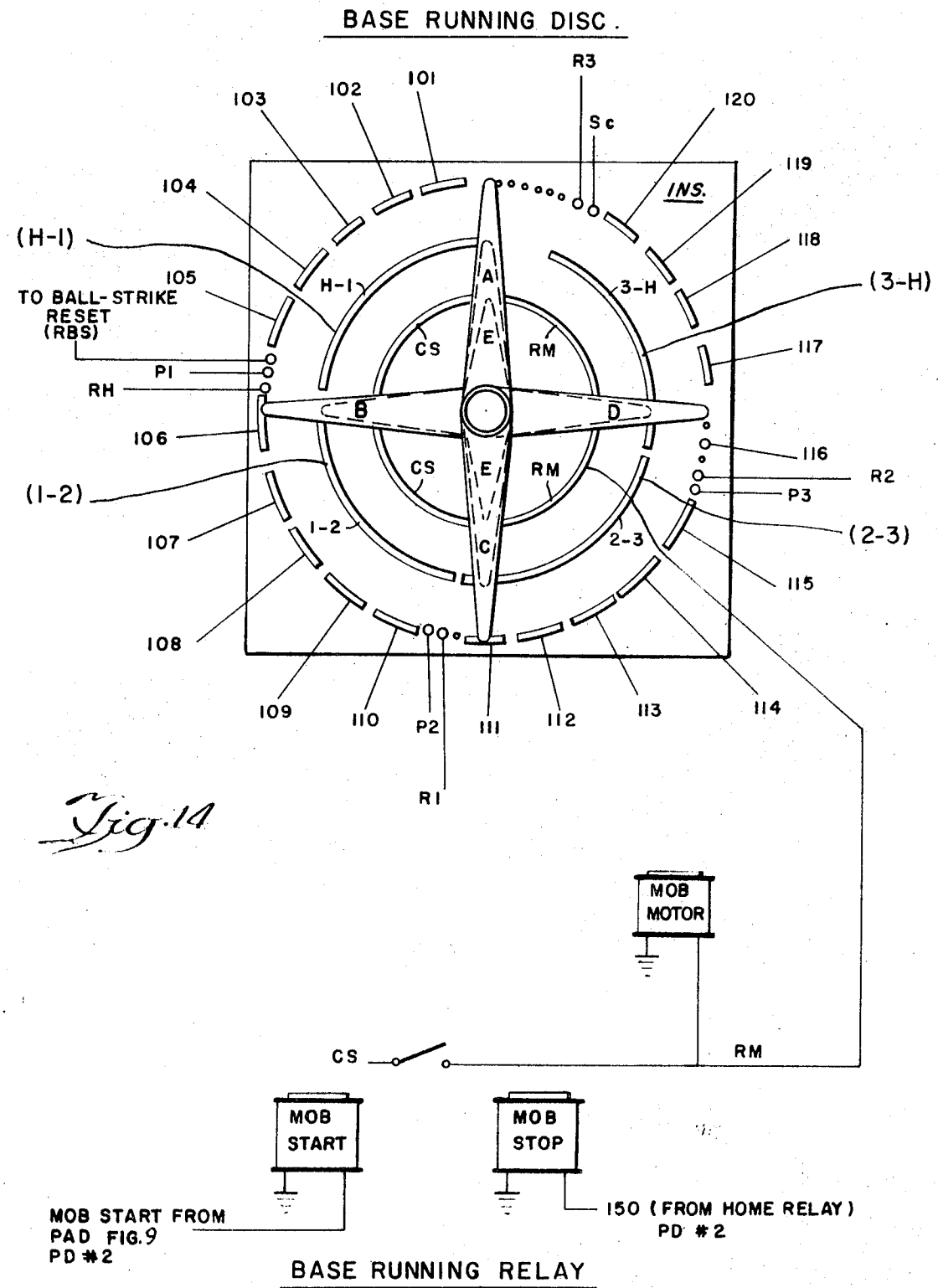

BASE RUNNING DISC.
R3
Sc
101
102
103
104
105
120
119
118
117
116
R2
P3
115
114
113
112
111
P2
R1
109
108
107
106
INS.
(H-1)
H-1
TO BALL-STRIKE RESET (RBS)
P1
RH
(1-2)
1-2
3-H
(3-H)
(2-3)
2-3
A
B
C
D
E
CS
RM
MOB MOTOR
CS
RM
MOB START
MOB STOP
MOB START FROM PAD FIG.9 PD #2
150 (FROM HOME RELAY) PD #2
BASE RUNNING RELAY

Fig. 14

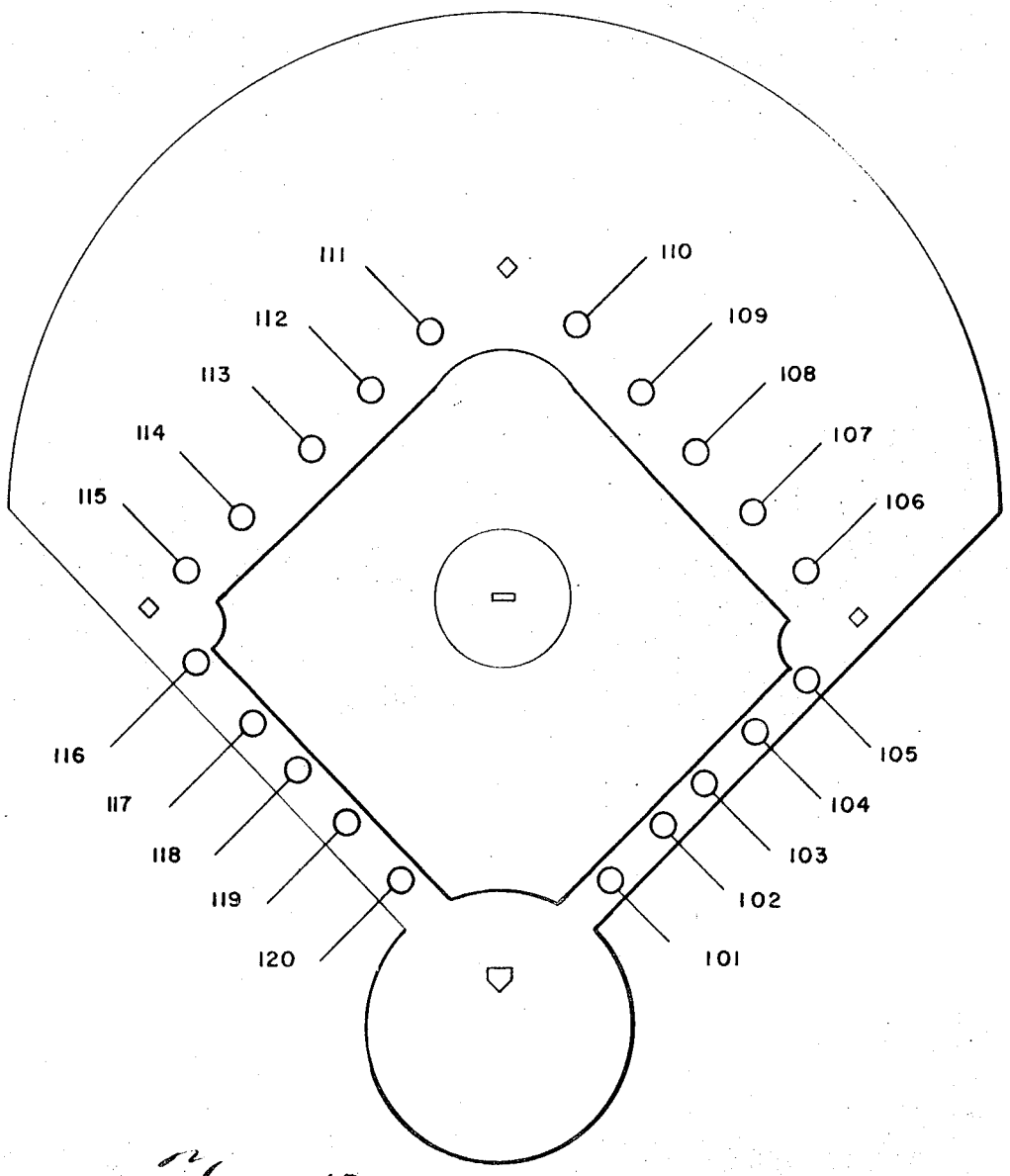
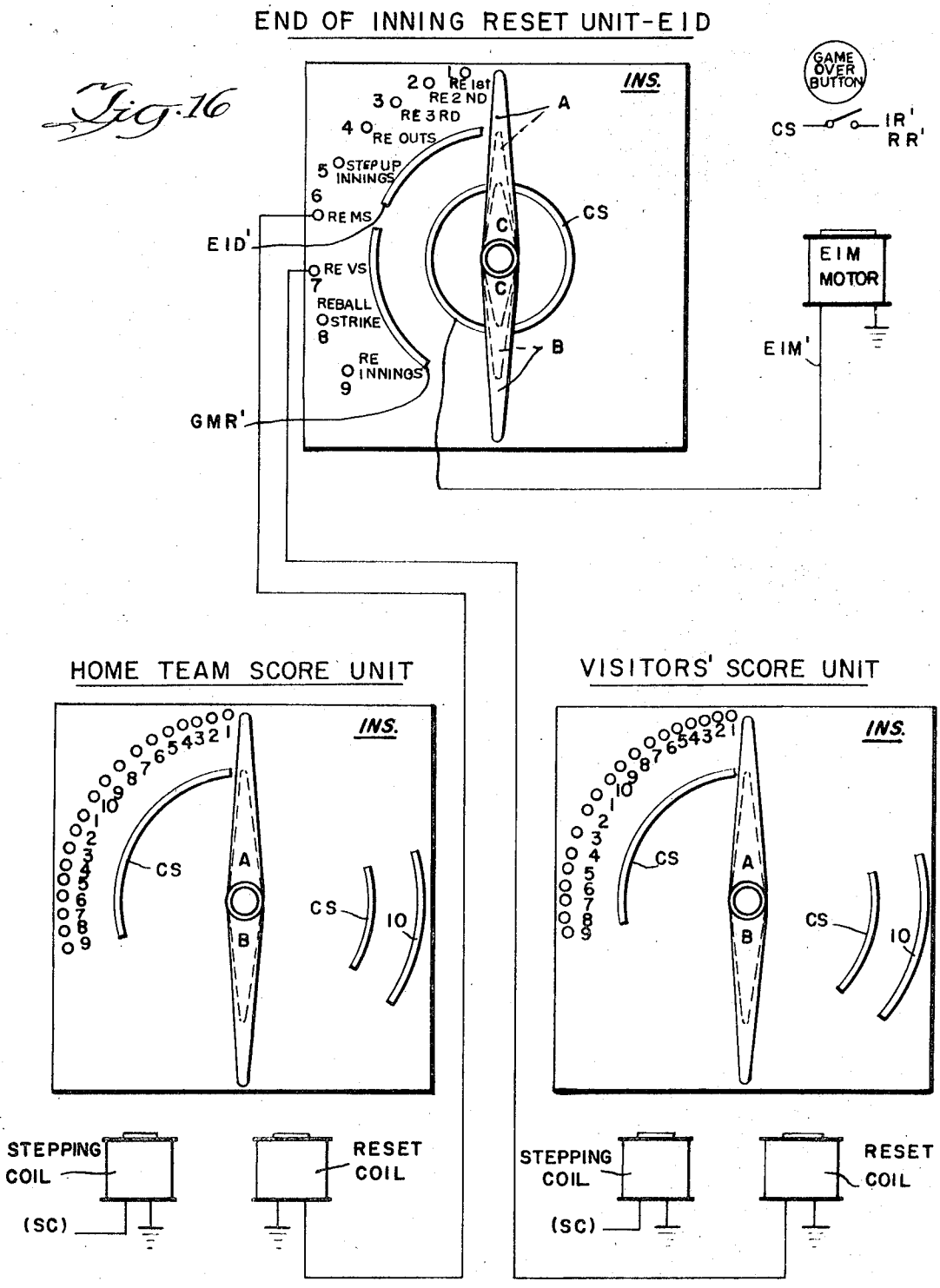

111
110
112
109
113
108
114
107
115
106
116
105
117
104
118
103
119
102
120
101

Fig. 15

Fig. 16


END OF INNING RESET UNIT-EID
INS.
LO
2 O RE 1st
3 O RE 2 ND
RE 3 RD
4 O RE OUTS
5 O STEP UP INNINGS
6
O RE MS
7
O RE VS
REBALL
O STRIKE
8
RE
O INNINGS
9
A
B
C
C
CS
EID'
GMR'
GAME OVER BUTTON
CS
IR'
RR'
EIM MOTOR
EIM'
HOME TEAM SCORE UNIT
VISITORS' SCORE UNIT
INS.
CS
A
B
CS
10
STEPPING COIL
(SC)
RESET COIL

AUTOMATIC ELECTRIC BASEBALL GAME

CROSS REFERENCE TO RELATED APPLICATION

This application, is a continuation of application, Ser. No. 683,885 filed Nov. 17, 1967 and now abandoned.

BACKGROUND OF THE INVENTION

This invention embodies improvements over prior automatic electric baseball games, wherein persons playing this improved version are provided with revised and additional means which greatly enhance the playing, the competition and the enjoyment of the game. One of the main improvements over prior games is the variety of plays provided by the unique arrangement of the plays in this improved apparatus. Whereas, in a typical prior game of this type, the person acting as the "Pitcher" makes a pitch — DOWN THE MIDDLE — and "Batter" swings — DOWN THE MIDDLE—to the resulting play is a HOME RUN each time. Extensive observations and research have indicated that this is not substantially true. A batter would probably hit a Home Run on only two or three of ten pitches — even if the pitch is exactly where he anticipated it to be. Likewise, he would not hit a triple or double or make the same "Out" every time off the same situation. This improved invention categorizes the hits, outs, fouls, etc., in such a manner as to afford the person playing the game as much variety as they would expect in a real game of baseball. Another improvement that is incorporated in this invention is the selection of pitches afforded the Pitcher, and the corresponding selection for the Batter. When the batter is anticipating the type of pitch that will be thrown, such as "-CURVE," "FAST BALL," or "SLIDER," it is of greater importance to him to know the kind of pitch being offered rather than the relative height of the pitch, as was used in prior games. A further improvement in this invention over the prior art, is the extensive use of lighted animated men in conjunction with the simulated ball to enact each play on the playing field, and the incorporation of more than one play in the same series of lights to create additional suspense, plus the unique means employed to control the illumination of the various plays at the proper time.

One of the most outstanding features of this invention that brings it closer to real baseball, that is not disclosed in the prior art, is the automatic advancement of the men around the bases. It will be noted that none of the prior art provides means whereby the men on base, and the batter, can advance in an irregular manner, such as when a base-runner is on 3rd base and a simulated bouncing ball is hit to an infielder, the base-runner holds his position on 3rd while the batter is thrown out at 1st base as he advances toward that base. Another example is when a batter receives a walk and 1st base is not occupied. The batter must advance to 1st base while any other men on base have to retain their positions. Still another example is when the batter hits a long flyout to the outfield with less than two outs. The base-runner on 3rd base normally advances to Home and scores, while any other base-runners hold their positions.

Another outstanding feature of this invention that brings it even more closely to real baseball but has not been disclosed in the prior art is the automatic functioning of certain plays common to the normal procedure of real baseball such as the "Double Play." When a simulated bouncing ball is hit to an infielder and the base-runner is on 1st base with less than two outs, the ensuing play will simulate the fielder throwing the ball to one of his players covering 2nd base, and he in turn will relay the ball to his 1st baseman before the advancing batter is able to reach the base. Likewise, on the same type of play but with base-runners on all three bases and with no "outs" the ensuing throw from the infielder fielding the ball would be to his catcher at Home Plate, creating a force out and preventing the base-runner on 3rd from scoring as he advances from 3rd base to home plate.

Still another novel feature of this invention not disclosed in the prior art is means whereby the defensive player may intentionally "Walk" a batter in hopes of creating a double-play. The offensive player on the other hand, has means whereby he can "Attempt Sacrifice Bunt" to advance his base-runner beyond a double-play situation, and at the same time put him in a scoring position.

The above mentioned feature points out another unique portion of this invention which is not incorporated in any of the prior art but is the basic part of the strategy involved in a real baseball game, i.e., the ability of a base-runner to advance two bases on certain "Single" hits, thereby allowing a man on 2nd base to score while the batter only advances to 1st Base.

These examples, and others that will appear in the following specification are a desirable part of any baseball game apparatus which wishes to follow the real game as truly as possible.

SUMMARY OF THE INVENTION

This invention has been designed to be played by two or more persons wherein the greatest amount of competition, strategy and suspense is to be realized as one would expect in a real game of baseball played at the professional level. One person functions as an offensive operator and the other as a defensive operator, in which positions they alternate in each half inning. The game comprises a translucent playing field with miniature baseball players and the throwing and bouncing of a baseball animated thereon. These animations become visible only when their respective lights are illuminated beneath them. The playing field is preferably mounted in an upright position on a suitable base designed primarily to house the equipment used in the function of the game.

Extending from the base are a pair of cables with identical control panels attached. Each control panel has offensive and defensive means for playing the game, thus eliminating the necessity of the players having to change sides or positions, or having to exchange panels. One player represents the HOME TEAM and his opponent represents the VISITORS. The components employed in the functioning of the game, in addition to the lights used for animation are as follows:

a. A motorized "Pitcher" unit primarily for simulating the throw from the Pitcher to the Catcher, and vice versa.
b. An electrically impulsed rotary stepping switch, referred to as the "Mixer" from which each play of the game is eventually determined.
c. A bank of "Play Control" electrical relays for controlling the action in the game.
d. A motorized "Base-Running" unit for animating the base-runners.
e. A group of interlocking type electrical relays designed to control the movement of the base-runners.
f. A transformer for reducing the current supply to a relatively low voltage.
g. Additional electrically impulsed rotary stepping switches for registering the BALLS, STRIKES, OUTS, INNINGS, and the HOME TEAM and VISITORS scores.

The operators of the Control Panels more or less assume the roles of Manager and/or Coach for their respective teams. They make the decisions and the animated men on the playing field carry out their instructions. At the beginning of play, the person representing the Home Team has the authority over the animated men stationed on the playing field in the normal baseball positions. He therefore operates the defensive portion of his control panel. This portion provides him with a pair of manually operated rotary switches, one of which designates a variety of pitches common to baseball, such as "CURVE," FAST BALL," and "SLIDER." The other of which has designated areas such as "OUTSIDE," "STRIKE," "INSIDE" and "PITCHOUT." Thus he is able to decide the type of pitch to be thrown and the area in which he wants it to be thrown. He also is provided with a simple momentary contact "-PITCH" switch for initiating the simulated throw from pitcher to batter.

The person representing the VISITOR at the beginning of play has authority over the batter and any subsequent baserunners. He operates the offensive portion of his control panel which provides him with a manually operated rotary switch which has "CURVE," FAST BALL" and "SLIDER" designations also. This rotary switch furthermore has an "ATTEMPT SACRIFICE BUNT" designation. The offensive portion of the control panel also has a lever action switch that represents a "-bat" for the batter.

As play begins, the defensive operator sets one of his rotary switches at "CURVE," "FAST BALL" or "SLIDER" for the type of pitch he wants his animated Pitcher to throw. He also sets his other rotary switch at "OUTSIDE," "STRIKE," or "INSIDE," indicating the area in which he wants the ball thrown. At the same time, the offensive operator attempts to anticipate what the defensive operator has selected by likewise setting his rotary switch at "CURVE," "FAST BALL" or "SLIDER." He then places his lever switch in the "AT BAT" position on his control panel. This allows the defensive operator to operate his "PITCH" switch, thereby causing his animated Pitcher to throw the simulated ball toward the animated batter. As the simulated ball approaches the batter the offensive operator has the choice of instructing his batter to swing at the pitch or let it pass. If he wants his batter to swing, he advances his lever to the "SWING" position on his control panel as the pitch reaches the batter. Otherwise he merely lets the pitch pass to the catcher. He should then place his lever in the "OUT OF BOX" position on his control panel thereby preventing the pitcher from making another pitch until he returns to "AT BAT."

Assuming that the first pitch was a "CURVE" — "INSIDE," and the offense had anticipated a Fast Ball, but decided to let it pass anyway, the words "CURVE" and "INSIDE" would both be illuminated in an allotted area in the proximity of the playing field indicating to the offensive operator and other observers the exact pitch that was thrown. The "BALL" registering stepping switch would immediately step to its number 1 position and illuminate its respective light. By letting pitches pass occasionally, the defensive operator should be able to determine more accurately the type of pitch being thrown when he does decide to swing. As the "PITCH" unit finishes its cycle, the ball would be simulated as being thrown from the catcher back to the pitcher.

If the batter had swung at the pitch, chances are he would have hit a bouncing ball simulated in lights to one of the animated infielders, who in turn, would have fielded it and simulated a throw to his 1st Baseman before the batter reached the base. An "out" would immediately register on the "OUTS" units and the batter, of course, would not be permitted to occupy 1st base. The motorized units and the play control relays would all return to their normal position, ready for the next pitch.

It is to be noted that the play just explained was considered as "probably" an infield-out. This is the result of extensive study and observation of the real game of baseball. These studies and observations are strategically arranged in categories in regard to what particular play or plays would most likely occur under certain circumstances. It is commonly acknowledged by those associated with real baseball that due to the speed of a pitched ball, the batter has to more or less anticipate the type of pitch that is to be thrown in order to achieve the best possible hit. Quite often he is completely fooled by a fastball when he figured the pitcher would probably throw a curve, or vice versa.

Thus, in the above example described as an "infield out," the pitch was a "CURVE" — "INSIDE" and the batter, expecting a "FAST BALL," swung at the pitch. In this instance, he was fooled completely. First, he anticipated the wrong pitch, and secondly, he swung when he should have let the pitch pass since it was "INSIDE." This particular play would be in the "D" category which is comprised of plays most likely to happen when the batter guesses wrong and swings at a bad pitch (outside or inside). This category consists of mostly "outs."

Category "A" is comprised of plays most likely to occur when the pitch is a "STRIKE" and is exactly the type that the batter is anticipating. Naturally the best hits are included in this category, such as Home Runs, Triples, Doubles, etc., although the possibility of a Foul and a Swing-and-Miss are also included.

Category "B" is when the batter anticipates the type of pitch correctly and swings, but the pitch is a "BALL" (outside or inside), which he should have let pass. The plays in this category consist mainly of "Fouls" and "Swung-and-Missed" situations. The amount of "outs" in this category are relatively few to compensate for having guessed the right type of pitch, and likewise, the amount of hits are relatively few because he swings at a bad pitch.

Category "C" is substantially the same as category "B." It is the result of the batter swinging at the wrong type of pitch, but the pitch is a "Strike." His chances of getting a hit are slightly less than category "B" due to the fact that guessing the right type of pitch is considered more important than the area in which it is thrown.

These categories and their respective plays are charted in the following specifications which detail their performance in the game.

This summary should help to point out the exceptional amount of strategy that persons playing the game are obliged to employ when competing seriously, and the amount of fun and enjoyment afforded the persons who wish to pitch and swing at random, merely to watch the animated men perform on the playing field.

It is quite obvious these features mentioned above, and similar situations that appear hereinafter are definitely a part of real baseball and are necessary in a game apparatus that wishes to truly represent the sport.

BRIEF DESCRIPTION OF THE DRAWINGS

These features and other objects of the invention appear in full in the following specification taken in conjunction with the accompanying drawings illustrating several preferred embodiments of the invention. In these drawings:

FIG. 1 is a direct view of a preferred embodiment of the game, showing the playing field in an upright position, and is a top plan view of one of the control panels afforded each operator each operator's control panel being identical.

FIG. 1A is an enlarged plan view of a portion of FIG. 1, showing the legends contained therein.

FIG. 2 is a side plan view of FIG. 1, and a side plan view of the other of the identical control panels.

FIG. 3 is an oblique view of the type of motorized unit used to animate the men on the playing field and the bouncing ball.

FIG. 4 is a side plan view of a portion of the same type of unit shown in FIG. 3, showing wiper fingers engaging one of the discs.

FIG. 5 shows diagrammatically the defensive switches and associated circuitry (upper portion of the figure), the offensive switches and associated circuitry (lower portion of the figure), and the play release relay –PR and the player selection relays A–B–C–D (middle portion of the figure).

FIG. 5A is a side view of one of the offensive switches of FIG. 5.

FIG. 6 shows plan views of the discs (or plates) mounted on the motorized "pitch" unit, showing the relative positions of the contacts on the face of the disc and the wiper fingers that engage them.

FIG. 7 is a symbolic drawing of a group of "Play Control" relays and their respective switches which control the enactment of each play in the game.

FIG. 8 is a plan view of disc No. 1 of the two discs mounted on the "Mixer" unit stepping switch, showing the categoric arrangement of the contacts thereon in regard to the chart of FIG. 8, and the relative positions of the wiper fingers that engage them.

FIG. 8A is a plan view of the Mixer Unit solenoid for stepping the Mixer switch, FIG. 8.

FIG. 9 shows plan views of the discs that are assembled on the "Animation" motorized unit, showing the arrangement of various contacts thereon for illuminating the lights that animate the plays in the game.

FIG. 10 is a plan view of the light board located immediately beneath the translucent playing field in FIG. 1, showing only the lights that correspond with and are responsive to the contact arrangement of the play animation discs shown in FIG. 9.

FIG. 11 is a plan view of the face of the disc assembled on the "BALLS," "STRIKES," "OUTS" and "INNINGS" count stepping units showing the relative positions of the wiper fingers, in regard to the contacts thereon, and a symbolic diagram of the relay employed to change the player's control panels from offensive operation to defensive operation and vice versa, each time three outs are made.

FIG. 12 is a plan view of disc No. 2 of the "Mixer" unit stepping switch likewise showing the categoric arrangement of certain contacts which correspond to, and represent the same plays as shown in disc No. 1 (FIG. 8).

FIG. 13 is a symbolic diagram of the interlocking type relays employed to control the advancement of the base-runners around the bases.

FIG. 13A is a symbolic diagram of the interlocking type relay also employed to control the advancement of the base runners around the bases.

FIG. 14 is a plan view of the face of the disc assembled on the motorized "BASE RUNNING" unit, showing the relative positions of the wiper fingers in regard to the contacts thereon.

FIG. 15 is a plan view of the diamond, or base running portion of the light board beneath the translucent playing field, showing only the lights involved in the advancement of men around the bases.

FIG. 16 is a plan view of the face of the disc assembled on a motorized "END OF INNING" reset unit, showing the relative positions of the wiper fingers in regard to the contacts thereon.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The pitcher has nine different pitches to select. The pitches are: curve (inside, strike, outside); and slider (inside, outside, strike); fastball (inside, outside, strike). The batter has three pitches at which he can swing; curve, and fastball, slider. The selections of the batter and pitcher result in one of four categories which will be termed as A, B, C or D.

"A" category — batter guessed correct type and the pitch was a strike.

"B" category — batter guessed correct type and the pitch was a ball (inside or outside).

"C" category — batter guessed incorrectly and the pitch was a strike.

"D" category — batter guessed incorrectly and the pitch was a ball (inside or outside).

The play resulting from each of the categories listed above depends on the position of the Mixer Stepping Relay No. 1 (MSRNo.1) FIG. 8. The particular play is then relayed to the proper Play Animation Disc (PAD)FIG. 9, which animates the play on the Playing field FIG. 10.

After the selections are made by the pitcher and the batter, the batter must have his Swing Lever Switch (SLS) FIG. 5, at position (2) before the Pitch Button (PB) can become operative. This prevents the pitcher from pitching before the batter is ready. The Current Source (CS) to make the pitch button operative begins at the Swing Relay R1 FIG. 7. The circuit denoted as SW1 goes directly to position No.2 of the swing lever (SLS) FIG. 5. When the batter puts his swing lever (SLS) FIG. 5 at the No.2 position, the pitcher can complete the circuit to the pitch motor by closing the pitch button switch (PBS) FIG. 5. The pitch unit consists of a motor FIG. 6 which drives two sets of fingers around two separate discs. Pitch disc No.1 (PDNo.1) consist of the sets of common fingers (PF1, PF2, PF3 and PF4, PF5, PF6), each set insulated from the other and also from the unit, FIG. 6. Pitch disc No.2 has three sets of common fingers insulated from each other and from the unit PF8, PF9 and PF10, PF11, PF12). Common fingers PF9 and PF10 are mounted at 180° rather than on top of each other as shown in FIG. 6. When the batter has his swing lever switch (SLS) at the 2 position, FIG. 5, and the pitcher closes his pitch button, the pitch motor begins and will be kept running for one half revolution by the fingers PF9 and PF10, FIG. 6. The current source (CS) is transferred through the fingers from the right side of the pitch disc No.2 directly to the pitch motor as shown in FIG. 6.

A series of plays will now be traced electrically. As the pitch motor starts, see. FIG. 6 pitch fingers PF1 and PF2 of the PD1 disc will pass over contacts 2, 3, 4, 5 and 1A which are connected directly to the playing field, FIG. 10. The current source is derived from normally closed contacts on the intentional walk relay (R5), thru circuit P'. Contact 1A which represents the pitcher throwing the ball is held on, while the fingers PF1 pass over the contacts 2, 3, 4, 5. This animates the pitcher throwing the ball to home plate. After one-half revolution the pitch fingers PF4, PF5 and PF6 will be at the top and will perform the same function on the next pitch. As the ball approaches home plate, the batter will put his swing lever switch (SLS) FIG. 5, into position (3) which constitutes a "swing." As the fingers PF3 crosses contact SWa, the circuit SW' goes thru position (3) on the swing lever switch (SLS) FIG. 5, directly to energize the swing relay (R1) FIG. 7. All play control relays once energized stay energized until play is over, and they are released thru play release relays (PR) FIG. 5.) When the swing relay is energized SW1 is broken preventing the pitcher from pitching the ball until the play is over. Also, 100X is the current source for all men on the playing field except the batter and the catcher, and is broken to extinguish all of their lights. Likewise 100A, the current source to the batter and catcher, must break. When the finger PF3 crosses over contact 91, the circuit goes from contact 91 on the swing relay (R1) FIG. 7 over to the batter selection switch FIG. 5.

For example, assume the pitcher selected a "Fastball" and a "Strike," and the batter selected a "Fastball." The circuit 91*a*, FIG. 5, will continue thru the batters F*a* contacts up thru the pitchers F2 contacts and come out RT. The RT circuit then goes directly to pitchers "Inside," "Strike" "Outside" switches, and continues thru contacts Sk1 and comes out "A." The "A" circuit then goes directly to energize the Play Selection Relay "A" FIG. 5. The A2' circuit coming from the "A" relay goes directly to the "A" section of the Mixer Stepping Unit disc 1, FIG. 8. The Mixer Stepping Unit has four sets of insulated fingers denoted MFA, MFB, MFC, and MFD. Each set contains two common fingers. This unit is conventionally stepped to successive positions by a ratchet responding to impulses given to the Mixer Unit solenoid (MS FIG. 8A). Assume the fingers in the "A" section are resting on Tri (triple); the tri circuit goes directly to the proper play animation disc (201) FIG. 9. Returning to FIG. 6, when the pitch disc fingers PF7 and PF8 cross pads AM and PLC, the source of current begins at the swing relay (R1) (PLC), FIG. 7. The circuit goes directly to the play animation disc motor (AM). Once motor (AM) starts it is kept running, via disc 200 and common fingers AMF, for one half revolution in a manner similar to the pitch motor. All the other play animation discs of FIG. 9 (201–207) have two sets of insulated fingers, each set containing three common fingers, as illustrated on disc PD1 in FIG. 6. The numerical contacts on the PADS are connected directly to the corresponding lamps on the playing field. As the "A" fingers of disc 201 pass over the contacts, the lamps on the playing field are successively illuminated so as to animate the ball bouncing and the players running, catching, and throwing the ball. As the unit completes its 180° revolution and the pitching and the base running units are back to their rest positions, relay (PR) will be energized as later described, causing relay "A," "Swing," relay (R1), and any other control relays to be released, thus the men come back on the playing field in their respective positions and the batter and pitcher are ready to make new selections and start a new play.

Assume the mixer stepping relay is resting on DOU 1 (double 1) instead of TRI. The circuit will still go to PAD 201. The "A" set of fingers will now illuminate lamps 29, 30, 31 and 32. At this point the circuit ends and will not illuminate 35, 36 and 37, instead the "B" set of fingers will illuminate 33 for alonger period of time to represent the catch of a bouncing ball, then illuminate 34, 29, 29*a*, and 10. Lamp 34 represents the centerfielder throwing the ball back to the infield and is held illuminated until 10 is illuminated representing the short stop catching the throw in the infield. In case of the triple, the "A" set of fingers will illuminate 29, 30, 31, 32, 33, 35, 36 and 37 representing the ball bouncing off the fence and going out into center field.

Assuming the fingers MFA are resting on home run 1 (HR 1) the circuit goes to PAD 202. The "A" fingers will illuminate lamps 43, 44, 45, representing the right and center fielders running back after a fly ball. The fingers will then illuminate 48, the home run lamp.

If the pitcher selected a "Curve," "Inside" and the batter selected "Curve," FIG 5, the circuit 91*a* going into the pitchers switch will go thru contacts C*a* on the batters switch and continue thru contacts C*l* in the pitchers "Type" switch and becomes circuit (RT). The (RT) circuit then continues to the pitchers "Inside" "Outside" "Strike" switch, goes thru contacts N2 and comes out "B." The "B" circuit goes directly to "B" relay (Play control relay 2) FIG. 5. The B2′ circuit coming from the "B" relay goes directly to the "B" section of the mixer stepping unit 1, FIG. 8. If the fingers MFB on the "B" section of the disc are resting on SIN–2, the circuit goes directly to play animation disc 203. The "A" fingers on disc 203 will illuminate lamps 38, 39, 40 and 41, then the "B" fingers will hold 41 for a longer period of time, then illuminate 38, 42 and 53 representing the ball being thrown back to the infield and caught by the second baseman. If the play had been DOU–2, the "A" fingers would have illuminated lamps 38, 39, 40, 41, 49, 50, 51, 52, 38 and 53, representing the ball bouncing out to the fence and being thrown back to the infield.

If the pitcher selected a "Slider," "Strike" and the batter selected "Curve," the circuit 91*a* going into the batter switch will go thru contacts C*a* on the batter switch then go thru contacts S1 and come out WR′ on the pitcher's "Type" switch. The WR′ circuit then goes over to the pitcher "Inside" "-Strike" "Outside" switch, goes thru contacts SK2 and comes out "C." The "C" circuit goes directly to the "C" relay, FIG. 5. The C2′ circuit coming from the "C" relay goes directly to the "C" section of the mixer stepping unit disc 1, FIG. 8. If the fingers MFC on the "C" section of the disc are resting on FLY–2, the circuit goes directly to PAD 202. The "A" fingers on disc 202 will illuminate lamps 43, 44 and 45, then the "B" fingers will illuminate 46, representing the right and center fielders running back after a fly ball and catching it.

If the pitcher selected a "Fastball" "Outside" and the batter selected a "Slider," the circuit 91*a* going into the batter switch will go thru contacts S*a* in the batter switch up thru contacts F3 on the pitcher's "type" switch and come out WR′. The WR′ circuit goes over to the pitcher Inside, Strike, Outside switch, continues through contacts 02 and comes out "D." The "D" circuit goes directly to the "D" relay, FIG. 5. The D2′ circuit coming from the "D" relay does directly to the "D" section of the Mixer Stepping Unit Disc 1 (FIG. 8). If the fingers MFD on the "D" section of the disc are resting on the fly–1 contact, the circuit goes directly to the pad No.204, FIG. 9. The "A" fingers on PAD No.204 will illuminate lamps 23,24,25 and 26 representing the short stop and left fielder running after a fly ball and catching it. If the fingers were resting on foul–2, the "A" set of fingers would illuminate 23, 24 and 25, then the "B" set of fingers would illuminate 27 and 28, representing the fielders running after a fly ball which dropped into foul territory.

If the pitcher and batter create a "C" or "D" situation and the fingers MFC or MFD are resting on inf-out, the resulting play will be determined automatically as out-at-first (OAF), Double Play (DP), or Out-at-Home (OAH) depending on the position of any men on base and the number of outs. (1) If there are no Outs and no Base Runner on first base, the play will be out at first. (2) If there are no Outs with a base runner on first base but not on third base, the play will be a Double-Play. (3) If there are no outs with base runners on first and third bases, the play will be Out at Home. (4) If there is one out with no base runner on first base the play will be Out at First. (5) If there is one out with a base runner on first base, the play will be a Double Play. (6) If there are two outs the play will be Out-at-First. The inf-out circuit is divided into two parts, inf-out "*a*" and inf-out "*b*," *FIG. 8. The inf-out "a" circuit goes directly to disc 205 (FIG. 9) to illuminate lamps 6,7,8,9,10 to animate the ball bouncing thru the infield and caught by the 3rd baseman. The inf-out "b" circuit goes directly to the out stepping unit (OSR), FIG. 11. If the "A" set of fingers are resting on 0 (no outs) the circuit denoted as 00′ goes directly to the 1st base relay, FIG. 13. If the 1st base relay is in position 1 (pos 1), indicating no baserunner on first base, the circuit goes directly to energize the out at first relay-R7 (FIG. 7). The circuit OAF′ from the relay-R7 goes directly to the OAF section of disc 205 (FIG. 9). If the first base relay is in position 2 (pos.2), indicating a baserunner on first, the circuit 00′ goes over to the third base relay. If the third base relay is in position 1 (pos.1) indicating no base runner on third base, the circuit goes directly to energize the double play relay-R9 (FIG. 7). The circuit DP′ from relay-R9 goes directly to the DP section of disc 205, FIG. 9. If the third base relay is in position 2 (pos 2) indicating a base runner on third base, the 00′ circuit from the first base relay will go directly to energize the out at home relay-R10. The circuit OAH′ from the relay R10 goes directly to the OAH section of disc 206. If the "A" set of fingers are resting on 1 (one out), the circuit denoted as 01′ goes directly to the first base relay, FIG. 13. If the first base relay is in position 1 (pos 1), the 01′ circuit goes to energize the out at first relay-R7. If the first base relay is in position 2 (pos 2), the 01′ circuit goes to energize the double play relay-R9. If the "A" set of fingers are resting on 2 (two outs), the circuit denoted as 02′ goes directly to out at first X relay-R8. The circuit OAF′ from the relay R7 goes directly to the OAF section of disc 205. If the play is OAF, the "A" fingers on disc 205 will illuminate lamps 54, 11, 12, 13, 14, 15, and 22, animating the ball being thrown to first base and caught by the first baseman. If the play is a double play, the "B" fingers on disc 205 will illuminate lamps 16,17, 18, 19, 20, 21 and 22, animating the ball tossed to second base, caught by the second baseman, then thrown to first base and caught by the first baseman. If the play is OAH the "A" fingers on disc 206 will illuminate lamps 8,7,6 and 47, animating the ball being thrown to home plate and caught by the catcher.

If the batter elects not to swing, he leaves his swing lever switch (SLS) FIG. 5, in the No.2 position. When the pitch finger PF1 crosses the contact SW*a* on the pitch unit disc-1, FIG. 6, circuit SW′ will be broken at position 3 on the swing lever switch (SLS), preventing the swing relay R1 from being energized. When finger PF1 crosses contact 91, the circuit goes directly to normally closed contacts on swing relay R1 to Let Pass circuit LP′. The let pass circuit LP′ coming from the swing relay R1 goes thru contacts on the int-walk relay R5 and directly to the pitchers "Inside" "Outside" "Strike" switch. Assume the pitcher selected "Curve," "Outside." The circuit LP′ will go thru contacts 04 and direct to energize the ball relay R4. When the ball relay R4 is energized, the source of current (cs), originating at the sac bunt relay R6 goes thru the circuit 200′ to the ball relay R4 and out circuit BA3′ directly to the pircher's "Inside" "Strike" "Outside" switch and thru contacts 04 to the "Outside light" 206 on the playing field, FIG. 10. The circuit TP′ from ball relay R4 goes directly to thepitcher's "Curve" "Fastball" "Slider" switch thru contacts C4 and to the "Curve light" 201 on the playing field, FIG. 10. When the fingers PF11 and PF12 on the pitch disc 2, FIG. 6 cross contact 93, the circuit 93 goes thru contacts 93 on the sac bunt relay R6 over to the contacts 93 on the ball relay R4. The ball step-up circuit (BSU) from ball relay R4 goes to the ball stepping unit (BSR) FIG. 11, stepping it to position 1. The

circuit 1 goes to the playing field, FIG. 10, to illuminate ball 1 lamp. The circuit LP*a* from the sac bunt relay R6 goes thru the LP*a* contacts on the ball relay R4 directly to the LP*a* section on pitch unit disc 1, FIG. 6. When the fingers PF 1 and PF 2 cross contacts 5, 4, 3, 2 they illuminate the ball being thrown back to the pitcher. If the pitcher selected a "Slider," "Strike" the LP circuit coming from swing relay R1 will go thru the LP contacts on the int-walk relay R5 then to the pitchers "Inside" "Strike" "Outside" switch, and thru contacts SK3 and come out ST', a strike. The circuit ST' goes to energize the strike relay R3, FIG. 7. The 200X circuit originating at the sac-bunt relay R6 goes thru the contacts on the strike relay R6 and directly to the Strike Light 205 on the playing field. Since there is only one strike selection, there is no need to send the circuit back thru the pitcher's "Inside" "Strike" "Outside" switch. The 200X circuit from the sac-bunt relay R6 goes thru contacts on the strike relay R3 over to TP' and the pitcher's "-Curve" "Fastball" "Slider" switch, thru contacts S4 to the "-Slider light" 203 on the playingfield. When the fingers PF11 and PF12 cross contacts 93, the 93 circuit goes to contact 93 on the strike relay R3. Since the relay is energized the SSU' strike step up circuit goes to the Strike Stepping Unit (SSR), FIG. 11, stepping it to position number 1. The circuit from position 1 goes to the playing field FIG. 10, (305) to illuminate the strike lamp. The "LP" circuit from sac bunt relay R6 goes thru the "LP*a*" contacts on the strike relay R3 to the "LP*a*"a section of the pitch unit disc, FIG. 6, to animate the ball being thrown back to the pitcher (the same as previously described). When the pitch fingers complete their 180° rotation, all relays are released, and the batter and pitcher are ready to make new selections.

If the batter decides to attempt a sacrifice bunt, he puts his switch in the "sac bunt" position. When the swing relay R1 is energized, as previously shown, the circuit 91*a* goes from the swing relay R1 to the BS*a* contacts on the batters switch, FIG. 5. The SB' circuit in turn energizes the sacbunt relay R6, FIG. 7. Assume the pitcher selected a "Fastball," "Inside." The SB1'circuit coming from sac-bunt relay R6 goes over to the pitcher's "Outside" "Inside" "Strike" switch FIG. 5, goes thru contacts N3 and comes out to circuit BA' which causes the "-Ball" relay R4 to become energized. The SB2 circuit from the sac-bunt relay R6, FIG. 7, goes over to the SB2 contacts on the ball relay R4. The bunt foul circuit SBB' coming from the ball relay R4 goes directly to the sac bunt foul section of disc 207, FIG. 9, to animate the ball bouncing foul on the playing field, FIG. 10. Circuit 207' from the contact on the sac-bunt relay R6 goes directly to the sac bunt light (207) on the playing field, FIG. 10. The sac-bunt relay R6 breaks the current source to LP*a*', SB2, 200X' and 93 so although the ball or strike relays are energized, the information is not illuminated on the playing field, the ball is not thrown back to the pitcher, the ball or strike stepping units are not energized. Assume the pitcher selected a "Fastball," "Strike." The circuit 91*a* from the swing relay R1 goes thru the SB*a* contacts on the batter switch and energizes the sac-bunt relay R6. The circuit SB1 from the sac-bunt relay R6 goes over to the pitcher's "Outside" "Strike" "Inside" switch thru contacts SK5 and to circuit ST' causing "Strike" relay R3 to become energized. The SB2 circuit on the sac-bunt relay R6 goes thru contacts on the strike relay R3 and comes out SBS'. The SBS' circuit goes to the 3rd base relay, FIG. 13. If the relay is in position 1 (pos 1) indicating no base runner on third base, the circuit comes out BFA' (a bunt fair). The BFA' circuit goes to the sac-bunt fair section of the disc 206 to animate the ball bouncing to the pitcher and thrown to first base. If the 3rd base relay is in position 2 (pos 2) indicating a base runner on third base, the SBS' circuit goes over to the 2nd base relay. If the second base relay is in pos 1, the circuit comes out bunt fair; if the 2nd base relay is in position 2 the circuit comes out bunt foul. After the play is determined "A," "B," "C," or "D" as previously described, if the mixer stepping unit disc 1, FIG. 8, fingers are resting on S and M (swing and miss), the S and M circuit instead of going to a PAD (play animation disc), FIG. 9, as all other plays, goes to the S and M contacts on the PD 1, FIG. 6. When the fingers PF1 and PF2 cross the S and M contacts the SM circuit goes to energize the S and M relay R2, FIG. 7. The 100X contacts on the S and M relay R2 complete the 100X circuit that the swing relay R1 broke, thereby turning the lamps on the playing field back on. The 100A circuit brings the catcher and batter back on. The LP*a* circuit goes to PD 1, FIG. 6, to illuminate the ball being thrown back to the pitcher. The S and M light circuit goes to illuminate the S and M light on the playing field, FIG. 10. The SSU' circuit goes to energize the strike stepping unit (SSR), FIG. 11, as the fingers PF11 and PF12 cross contact 93 on the PD2, FIG. 6.

If the pitcher elects to intentionally walk a batter he will put his pitch switch in the "Pitch Out" position. When the fingers PF11 and PF12 on PD2, FIG. 6, cross contact 94 the 94'circuit goes thru contacts IW' on the pitcher switch over to energize the int-walk relay R5. The S*wa* circuit is broken preventing the swing relay R2 from being energized. The P' circuit is broken and the PW' circuit is completed to the PW' section of pitch disc 1, FIG. 6, illuminating lamps 2A, 3A, 4A and 5A, instead of 2, 3, 4 and 5 on the playing field, FIG. 10. The LP' circuit is broken preventing the ball and strike relays R3 and R4 from being energized. The 100X circuit is broken and the 100B circuit is completed, illuminating the catcher receiving the outside pitch from the pitcher, FIG. 10. The LAP circuit is broken and the LAPW is completed illuminating the pitcher throwing the ball to the catcher and the catcher returning the ball to the pitcher, FIG. 10. The BSU circuit goes to the ball stepping unit (BSR), FIG. 11, when the fingers PF11 and PF12 pass over contact 93, FIG. 6. If the play is to result in an "out" or a "foul," the circuits going to the outs stepping unit, FIG. 11, or the strike stepping unit, FIG. 11, are located on the individual play animation disc, FIG. 9. The out circuit (OSU) goes directly to the outs stepping unit coil. The bunt foul strike step-up circuit (PAD) 207 goes to the strike stepping relay coil (SSR), FIG. 11. The "swing" foul strike step up circuit (SSU*a*) (PAD) 204 goes to the SSR*a* section of the strike stepping unit. If there are no strikes or one strike the SSU*a* circuit will go to the outs stepping relay coil. If there are two strikes the circuit will be broken, FIG. 11. If the batter is struck out as the result of a "let Pass," "swing and miss," or sac bunt foul with two strikes, the third strike circuit 95 coming from fingers C on the SSR, FIG. 11, goes to the contact 95 on the PD2, FIG. 6. When the fingers PF11 and PF12 cross contact 95, the circuit goes directly to the outs stepping unit coil, FIG. 11. When an out is made the circuit 96 on the outs step up coil goes to reset the ball stepping unit and the strike stepping unit, FIG. 11.

BASE RUNNING UNIT

The base running disc, FIG. 14, consists of five (5) sets of insulated fingers; A, B, C, D and E. Each set consists of two (2) fingers. The E Fingers keep the motor running for one (1) quarter of a turn, 90°, once the motor starts. The base running relay, FIG. 14, once closed, keeps the motor running continuously until it is opened. The base running disc consists of four (4) sections; H–1 lights the lamps 101 to 105; 1–2 lights the lamps 106 to 110; 2–3 lights the lamps 111 to 115; 3–H lights the lamps 116 to 120, FIG. 15. The source of current for the H–1 section originates from the Home relay, FIG. 13A; the 1–2 section from the 1st base relay, FIG. 13, the 2–3 section from the 2nd base relay and the 3–H section from the 3rd base relay. The home relay is closed (indicating a batter at home) by the PH circuit from the pitch disc 2, FIG. 6, and is opened (indicating no batter at home) by the RH circuit on the H–1 section on the base running disc. The 1st base relay is closed (indicating a base runner on first base) by the circuit P1 on the H–1 section of the base running disc and is opened (indicating no base runner on first base) by R1 on the 1–2 section of the base running disc. The 2nd base relay is closed by P2 on the 1–2 section and opened by the R2 on the 2–3 section. The 3rd base relay is closed by P3 on the 2–3 section and opened by

R3 on the 3–H section. The score circuit SC originates on the 3–H section. If all "men on base relays" are opened as shown in FIGS. 13 and 13A, the circuit 150 originating at the 3rd base relay will go thru the 150 contacts on the 2nd base relay, the 1st base relay, the Home relay, and go directly to the MOB STOP coil on the base running relay. When the Home relay is closed and the motor starts, the "A" fingers will illuminate lamps 101–105. When the "A" fingers cross P1 the 1st base relay closes. When the "A" fingers cross RH the home relay is opened. With the first base relay closed the 150 circuit is broken allowing the "A" fingers to illuminate lamps 106–110. With the Home relay opened the trailing fingers "D" "will not" illuminate lamps 101–105. When the "A" fingers cross P2 the 2nd base relay closes. When the "A" fingers cross R1 the 1st base relay is opened. With the second base relay closed the circuit 150 is still broken allowing the "A" fingers to illuminate lamps 111–115. With the 1st base relay open the trailing fingers "D" will not illuminate lamps 106–110. When the "A" fingers cross P3 the 3rd base relay will close. When the fingers "A" cross R2 the the second base relay will open. With the 3rd base relay open the circuit 150 is still open allowing the "A" fingers to illuminate lamps 117–120. With the 2nd base relay open trailing fingers "D" will not illuminate lamps 111–115. When the "A" fingers cross SC the circuit will go to record a score. When the "A" fingers cross R3 the 3rd base relay will open. With all relays open the 150 circuit will go to the MOB STOP coil and break the circuit to the motor. The "E" fingers will being all fingers to their home position (complete the 360° turn).

When the play is a 'one base' single, the circuit 1BS', "MOB one base stop" from the mixer stepping unit disc 2, FIG. 12 is completed to the first base relay. When the fingers cross P1 and close the 1st base relay; cross RH and open the Home relay, the 150 circuit goes thru normally closed contacts on the Home relay and stop the MOB motor at the lamp 106 representing the batter running to 1st base and occupying that position. The same operation is performed for a two base or three base relay. When the play is a home run, the fingers make a 360° revolution as described above.

When the play is a "two base" single, the batter advances to first base, while a base runner on first will go to third, or a base runner on second will score. Following the sin–2 PAD 203, FIG. 9, when the fingers cross MOB start, the fingers on the base running unit will illuminate lamps 101–105, P1 and RH, and continue to lamp 107. At the same time the fingers on PAD 203, FIG. 9, will cross contact 2BS*a* closing the Two Base Single relay R13, FIG. 7. The 1–2 circuit is broken and the circuit goes directly to lamp 107, and the source of current from the relay R13 goes directly to the MOB STOP. The "E" fingers will complete the 180° turn. With the 1–2 circuit broken the fingers will not P2 or R1; therefore when the play is over the "two base" single relay R13 is opened, the 1st base relay will still be closed, illuminating lamp 106 representing a base runner on 1st base. Since the fingers make a 180° revolution a base runner on first would advance to third and a base runner on second would score.

The circuit to control the base running for the walk, sac bunt, and inf-out, will be denoted as WBI. When the ball stepping unit, FIG. 11, is advanced to ball four, the WBI circuit goes directly to the pitch disc 2, FIG. 6. When the fingers PF7 and PF8 cross the WBI contact the base running relay, FIG. 14, closes, starting the MOB motor. When the fingers PF7 and PF8 cross the WBIS contact the base running relay opens. The "E" fingers on the base running disc keeps the motor running to complete the 90° revolution, representing a one base advance. The WK circuit from the ball stepping unit, FIG. 11, goes to the 1st base relay, FIG. 13, if there is no base runner on 1st base the circuit goes to the Walk Relay R11. If there is a base runner on 1st base the WK*a'* circuit from the first base relay goes over to the 2nd base relay, FIG. 13. If there is no base runner on 2nd base the circuit goes to the walk relay R11. If there is a base runner on 2nd base the circuit is broken. When the walk R11, FIG. 8, is closed, the 2–3 circuit is broken and goes to the 111 light, the 3–H circuit is broken and goes to the 116 light. When a sac bunt is made the WBI circuit originates from PAD 206, FIG. 9. When a sac bunt relay R6 is closed as previously described, the P1 circuit on the base running unit is broken (not allowing the batter to occupy the base), the 3–H circuit is broken and goes to lamp 116. When the play is OAF (out at first), DP (double play) OAH (out at home) or OAFX (out at first with two outs), the WBI circuit originates from the inf-out on mixer stepping unit 2, FIG. 12. When the play is OAF, the OAF RELAY R7, FIG. 7, breaks P1, breaks 2–3, and the circuit goes to lamp 111, breaks 3–H and the circuit goes to lamp 116. When the play is a DP, the DP relay R9, FIG. 8 breaks P1, breaks P2 and breaks the score circuit. When the play is OAH, the OAH relay R10 breaks the score circuit. When the play is OAFX, the OAFX relay R8 breaks P1, and breaks the score circuit (SC). When the score from third relay R12 is closed as previously described, the 1–2 circuit is broken and goes to lamp 106, the circuit is broken and goes to lamp 111, and the H–1 circuit is broken preventing the batter from advancing to first base. When three outs are made, the EID circuit from the outs stepping unit, FIG. 11, goes to the End of Inning relay R14. The circuit from R14 goes to (1) end of inning section of the end of inning disc, FIG. 6; (2) to start EID motor. As the fingers "A" cross contacts 1–5, the base runners left on base are erased, the outs are reset back to the zero position, and the inning stepping relay is advanced one position, FIG. 11.

The game apparatus consists of two sets of pitcher switches and two sets of batter switches, one set for each player. When the inning stepping relay is in its home position as shown in FIG. 11; (1) the lamp 1 is illuminated on the playing field, FIG. 14, (308), (2) the score (SC) circuit from the base running unit, FIG. 14, goes to the visitors score stepping relay, FIG. 16, (3) the switch over relay FIG. 11, is "not" closed allowing the circuit SWI', 91, BA3', LP', SB1' to go to the visitors set of switches. After three outs and the finger on the end of the inning disc cross contact 5 and advance the inning stepping relay one (1) position; (1) the 1 lamp on the playing field is still illuminated, FIG. 11 (308), (2) the score (SC) circuit goes to the home score stepping unit, FIG. 13A, and, (3) the switch over relay, FIG. 11, is closed allowing the circuits SW1', 91, BA3', LP', SB1' to go to the home set of switches. When the inning stepping switch is moved to the next position; (1) the 2 lamp on the playing field will be illuminated, and (2) all circuits will evert back to the visitors set of switches.

When the game is over, the game over button, FIG. 16, will close the end of inning relay R14 and the Game Over relay R15. The circuit from the game over relay R15 goes to the game over section of the end of inning disc, FIG. 16. As the fingers cross contacts 5–9, the scores are reset back to the zero position, FIG. 11, and the innings are reset back to 1, FIG. 11.

While I have illustrated and described what I regard to be the preferred embodiments of my invention, nevertheless, it will be understood that numerous modifications and rearrangements may be made therein without departing from the essence of the invention. Therefore, it is to be acknowledged that the invention is not to be limited to the embodiment herein disclosed.

I claim:

1. In an automatic baseball game apparatus, the combination of:

a translucent playing field;

a first series of lights to simulate the movement of a batted ball thereon;

additional lights simulating a ball being thrown from one player to another;

successive lights arranged in a diamond shaped pattern to represent animated men moving around the base paths;

first electromechanical means for controlling the movement of said men on the base paths, whereby some men may be allowed to advance while others retain their positions or are removed;

manually operated offensive and defensive switching means for determining and selecting each play to be enacted on the playing field;

circuitry responsive to motorized means for simulating said plays in an animated manner by means of said series of lights and said additional lights on said playing field when the ball is batted;

circuitry means connected to said electromechanical means for automatically advancing the men around the base paths in a regular or irregular manner in coordination with the current play by lighting said successive lights;

a second series of lights depicting the path of the ball from pitcher to catcher;

motorized means to illuminate said second series of lights, simulating a ball being thrown from the pitcher to the catcher;

additional electromechanical means for lighting a designated area of the apparatus to reveal the pitch selection made by the pitcher when the pitched ball is not batted, including supplementary circuitry for registering said situation as a "ball" or "strike" on appropriate registering units;

electrically operated registering units for automatically recording outs, scores, innings, balls and strikes;

additional circuitry for automatically advancing the men around the base paths in the proper manner when the ball registering unit reaches its fourth ball, or walk position; and

manually operated means for resetting said apparatus to its starting state.

2. An automatic baseball game as set forth in claim 1 wherein said manually operated offensive and defensive switching means comprise: manually operative controls for an offensive operator and similar controls for a defensive operator positionable at various indicia representing pitching and batting selections common to real baseball, said controls comprising switching means for each of said selections, intercircuitry between said offensive and defensive control switches, a group of play selecting relays responsive to said intercircuitry for determining each play of the game, and a motorized unit containing circuitry for the plays to be animated on the playing field.

3. An automatic baseball game as set forth in claim 1, wherein said manually operative switching means for an offensive player simulates the manipulation of a bat and said manually operative switching means for a defensive player is a push button to initiate said simulation of a ball being thrown from the pitcher to the catcher and further including: designated areas in the immediate proximity of the bat switching means whereby the operator of the "bat" may place it in various positions including "at bat," "out of box," and "swing," as the play of the game demands; a motorized pitching unit activated by a circuit completed when the offensive player places his "bat" in the "at bat" position and the defensive operator engages said push button, said motorized pitching unit comprising a series of contacts mounted in a circular manner on stationary discs secured to the unit, and wiper fingers mounted on a shaft to successively engage said contacts as the shaft revolves causing said second series of lights to be illuminated to simulate a ball being thrown from the pitcher to the catcher and returned if necessary, said wiper arms also providing the impulse for circuitry that passes thru closed contacts when the offensive operator has his "bat" in the "swing" position and eventually energizes the play control relays.

4. In an automatic baseball game as set forth in claim 1: a master play-mixing stepping switch unit comprising a motivating coil, and stationary contact discs having a multiplicity of contacts thereon each representing a predetermined play, said contacts being arranged in groups containing an equal number of contacts, said contacts being attached to the plates in a preferred circular manner wherein each group of contacts is respectively responsive to a secondary circuit created by a corresponding play selection relay and is engaged by common sets of insulated wiper fingers which, being secured to a shaft, change positions each time the motivating coil for the unit is pulsed; circuitry from said contacts interconnected with respective circuitry of a motorized play animating unit comprising a plurality of sets of wiper arms and fixed contacts, said fixed contacts being interconnected with said series of lights and said additional lights, to animate the play on the playing field.

5. In an automatic baseball game as set forth in claim 1, said first electromechanical means simulating in lights the placing and advancing of animated players on the base paths, said first electromechanical means consisting of a motorized unit having a disc secured thereto with groups of contacts attached to said disc in a preferred circular manner, said disc being employed to simulate the players occupying and running the bases and paths, and to activate associated relays which automatically control the movement of the men so that they comply precisely to the real game of baseball, said motorized unit and associated relays being interconnected by circuitry whereby men on base may be permitted to advance, or retain their bases independently, or may be removed during play.

6. In an automatic baseball game as set forth in claim 1, third electromechanical means and associated circuitry interconnected to said registering units for indicating the progress of the game whereby the registration of a third out on the "outs" registering unit will cause said "inning" registering unit to advance one step automatically alternating the offensive and defensive circuitry, manually controlled by the operators, from one operator to the other, and wherein each "even" numbered step taken by the "innings" registering unit will indicate, by a light in a designated area of the apparatus, that the play of the game has moved to the next inning.

7. In an automatic baseball game apparatus, the combination of: a playing field having an infield area and an outfield area; first means effective when energized for simulating the flight path of a batted ball across said playing field; runner means for indicating animated runners moving around a base path within said infield area; outfielder means spaced from said runner means for indicating the position of an outfielder player within said outfield area; animation means effective when energized for causing said outfielder means to move across the outfield area of said playing field in generally a direction toward said flight path; and circuit means effective when the ball is batted for energizing said first means and said animation means to indicate said outfield player moving across said outfield area in an attempt to catch the batted ball as said runner means indicates said runner is moving around the base path in said infield area.

8. The automatic baseball game of claim 7 including further means for indicating the position of another player on said playing field, and said animation means includes dual operating means for causing both said outfielder means and said further means to move across said playing field in generally a direction towards said flight path.

9. The automatic baseball game of claim 8 wherein said dual operating means causes said second and further means to converge while moving across said playing field.

10. In an automatic baseball game apparatus, the combination of: a playing field; first means effective when energized for simulating the flight path of a batted ball across said playing field; second means for indicating the position of a player on said playing field; animation means effective when energized for causing said second means to move across said playing field in generally a direction parallel with or toward said flight path; circuit means effective when the ball is batted for energizing said first means and said animation means to indicate a player moving across said playing field in an attempt to catch the batted ball; and catch means effective when energized for indicating that the player has caught the batted ball, play indicating means having a first state for energizing said catch means and a second state in which said catch means is not energized to simulate the player missing the batted ball, and means for selecting the state of said play indicating means.

11. In an automatic baseball game apparatus, the combination of: a playing field; first means effective when energized for simulating the flight path of a batted ball across said playing field; second means for indicating the position of a player on said playing field; animation means effective when energized for causing said second means to move across said playing field in generally a direction parallel with or toward said flight path; circuit means effective when the ball is batted for energizing said first means and said animation means to indicate a player moving across said playing field in an attempt to catch the batted ball; and third means effective when energized for simulating the flight path of a ball thrown by a player across said playing field, and said circuit means includes second circuit means effective after energization of said first means and said animation means for energizing said third means, thereby simulating a player returning the ball after interception thereof.

12. The automatic baseball game of claim 11 wherein said animation means includes catch means for locating said second means at one position on said playing field and throw means for locating said second means at another position on said playing field, said second circuit means sequentially energizing (1) said catch means, (2) said throw means, and (3) said third means, thereby simulating said player catching the batted ball at one position and throwing the batted ball from another position on said playing field.

13. In an automatic baseball game apparatus, the combination of:

a playing field having a base path;

means to represent animated men;

simulation means associated with said playing field and responsive to electrical signals for simulating plays including the advancement of said animated men means around the base path;

manually operated switching means for selecting plays to be enacted on the playing field;

circuit means for coupling said simulation means to said switching means and for generating electrical signals representing plays occurring in accordance with the selection of said switching means;

automatically operated registering means coupled to said circuit means and responsive to said electrical signals for automatically recording information including balls, strikes, and outs, and means for generating control electrical signals including a player advancement electrical signal in response to recorded information; and

additional circuit means for coupling said simulation means to said generating means to cause said simulation means to simulate plays including the advancement of at least one of said animated men means in response to said player advancement electrical signal, whereby both said manually operated switching means and said automatically operated registering means are effective to control said simulation means.

14. The automatic baseball game of claim 13 wherein said generating means includes walk means for generating a walk electrical signal in response to recording of four balls, and said simulation means including means for advancing said animated men means in response to said walk electrical signal.

15. The automatic baseball game of claim 13 wherein said generating means includes erase means for generating an erase electrical signal in response to recording of the third out, and said simulation means including base occupying means for controlling the simulation of said animated men means occupying bases after advancement of the animated men means around the base path, and means coupling said erase means to said base occupying means for preventing said animated men means from occupying bases in response to said erase signal.

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