March 5, 1935. R. J. RHODES 1,993,075

BASEBALL PLAYING APPARATUS

Filed May 23, 1932 8 Sheets-Sheet 1

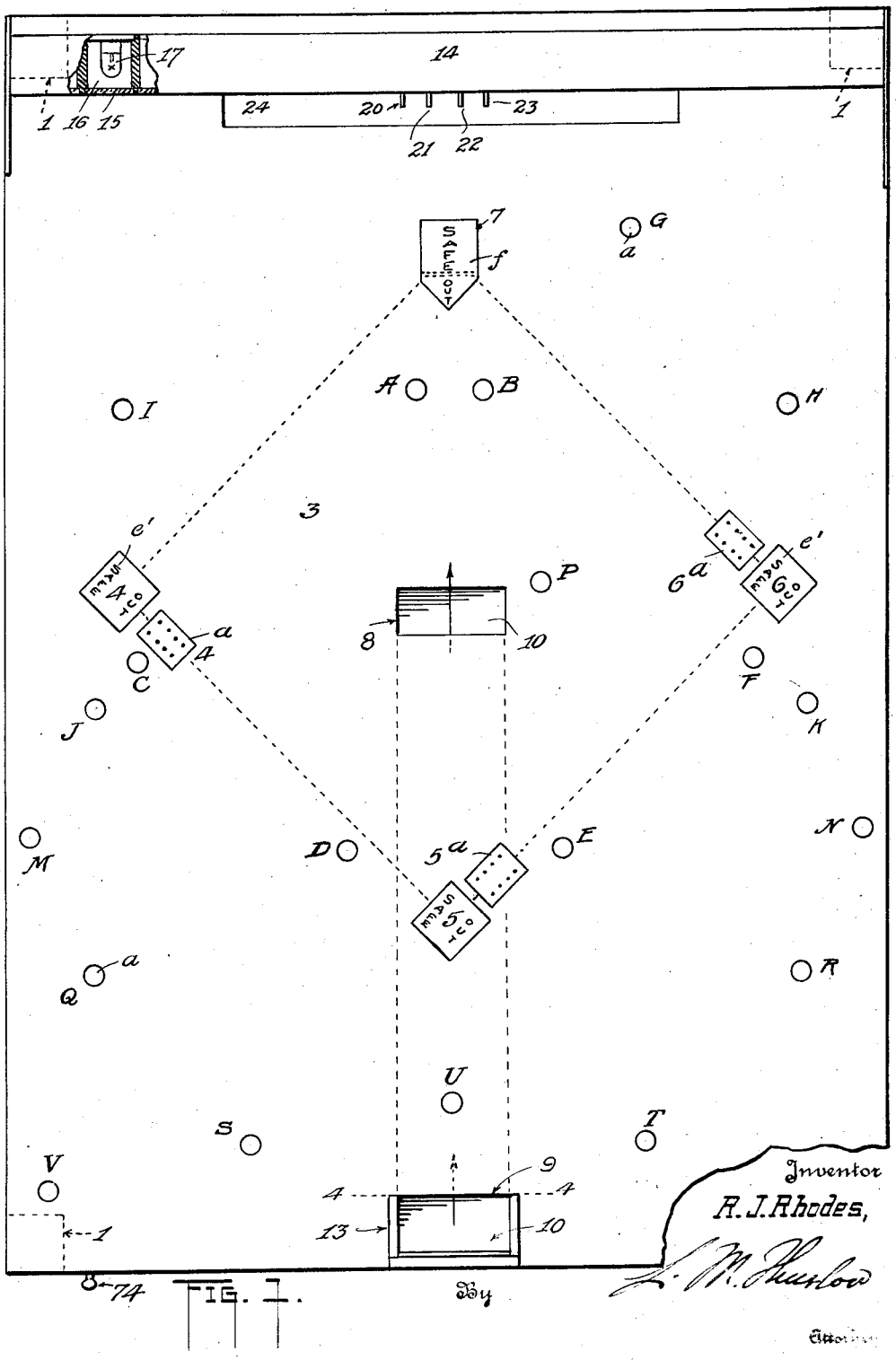


FIG. 1.

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BASEBALL PLAYING APPARATUS

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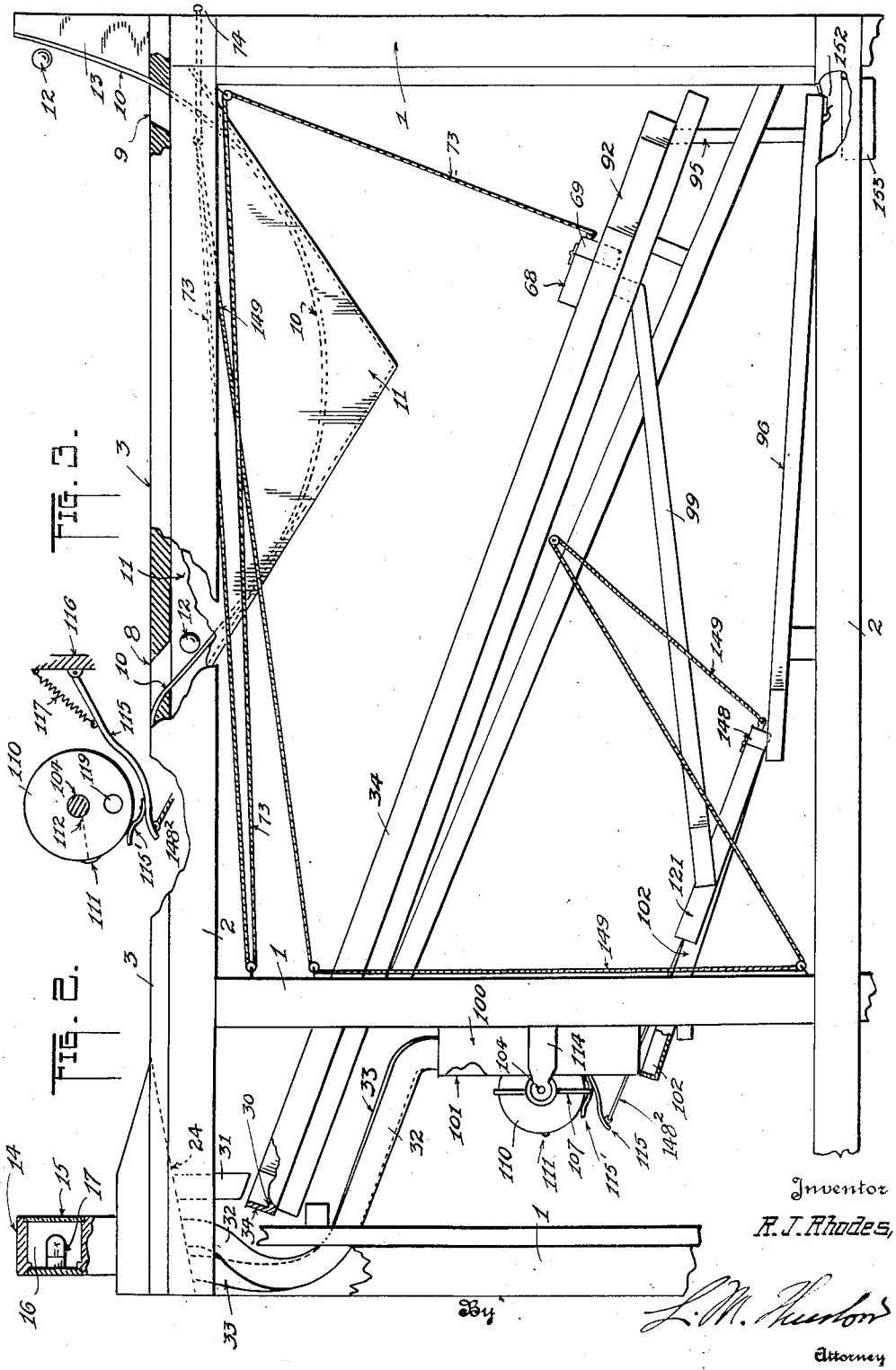


FIG. 2.

FIG. 3.

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BASEBALL PLAYING APPARATUS

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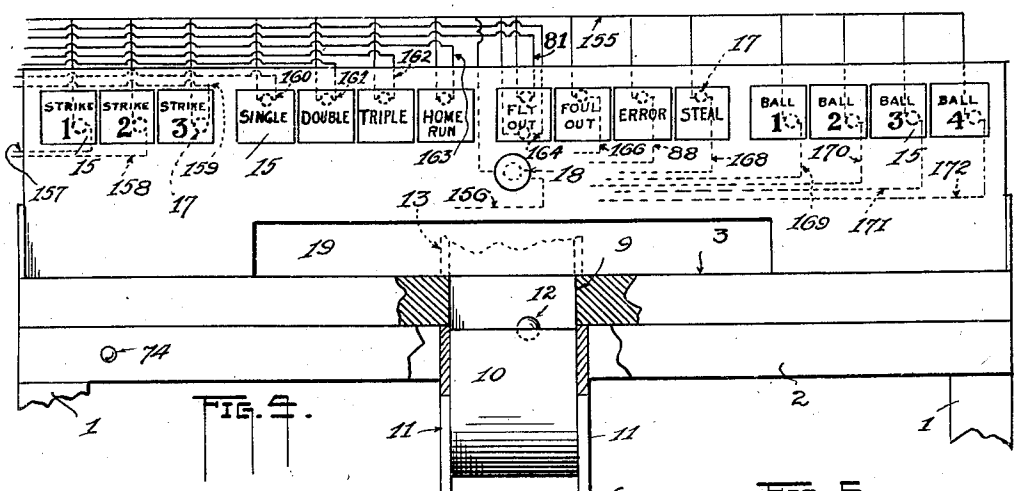


FIG. 4.

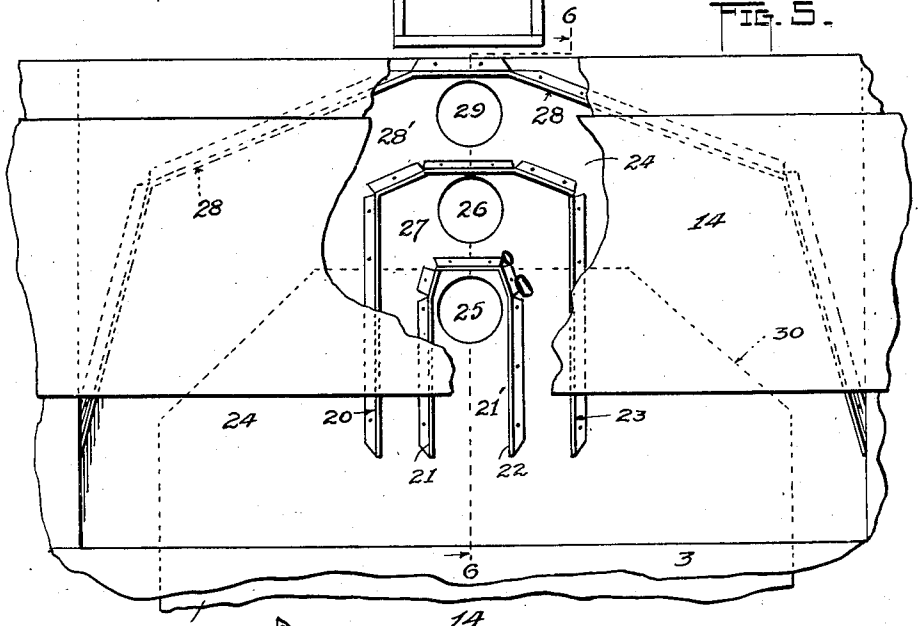


FIG. 5.

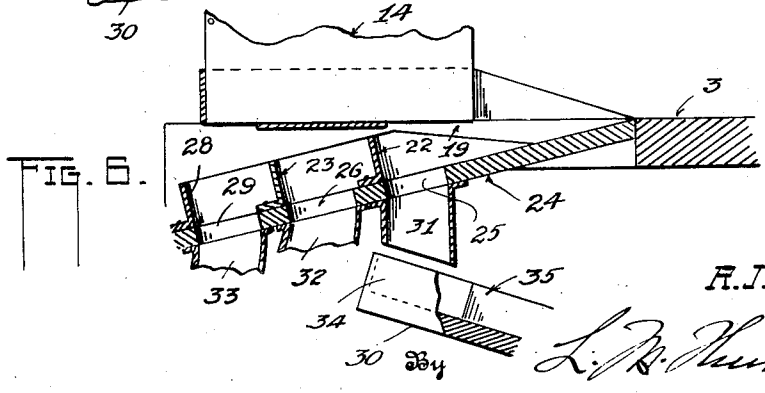


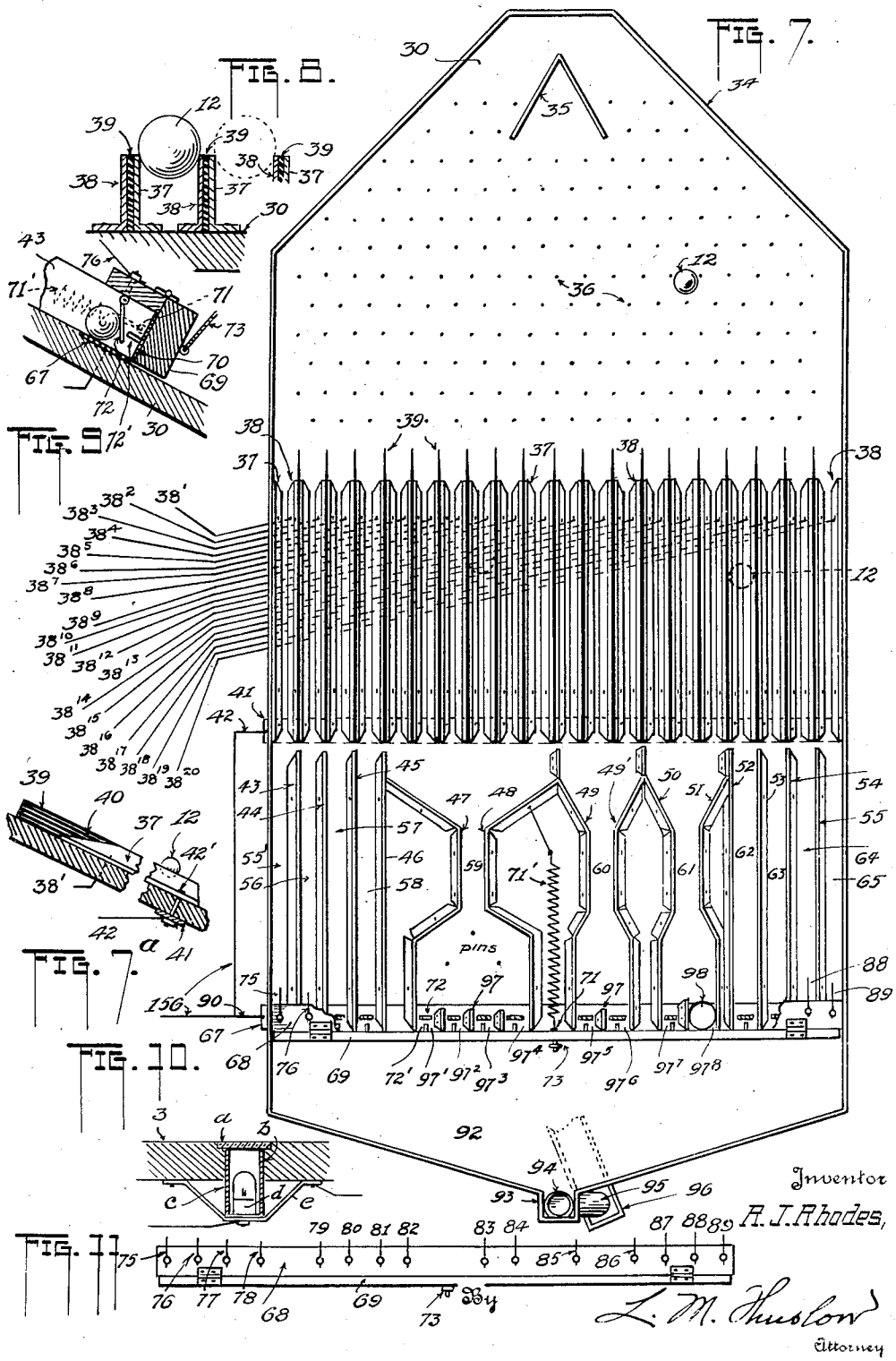
FIG. 6.

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BASEBALL PLAYING APPARATUS

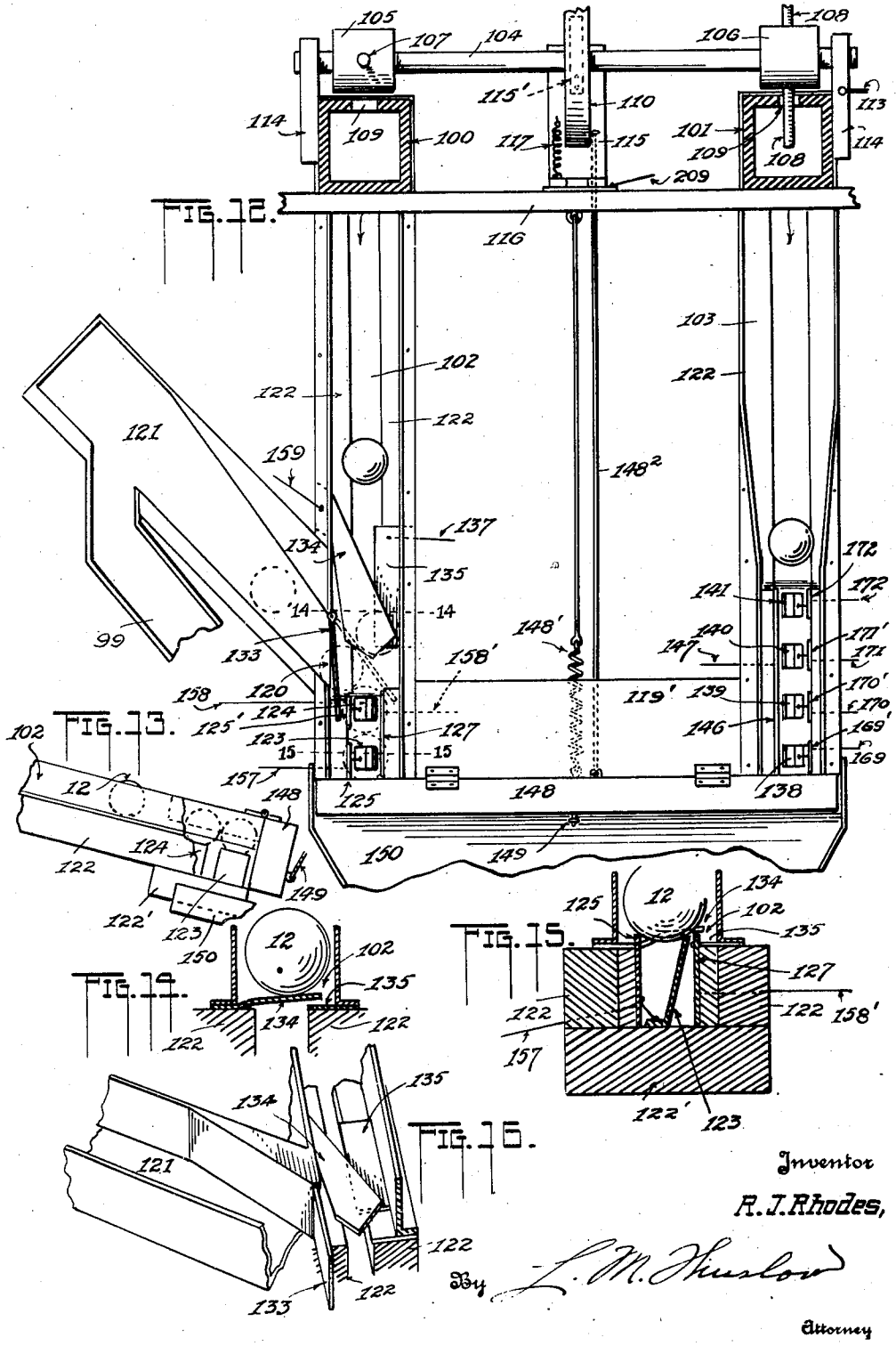
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BASEBALL PLAYING APPARATUS

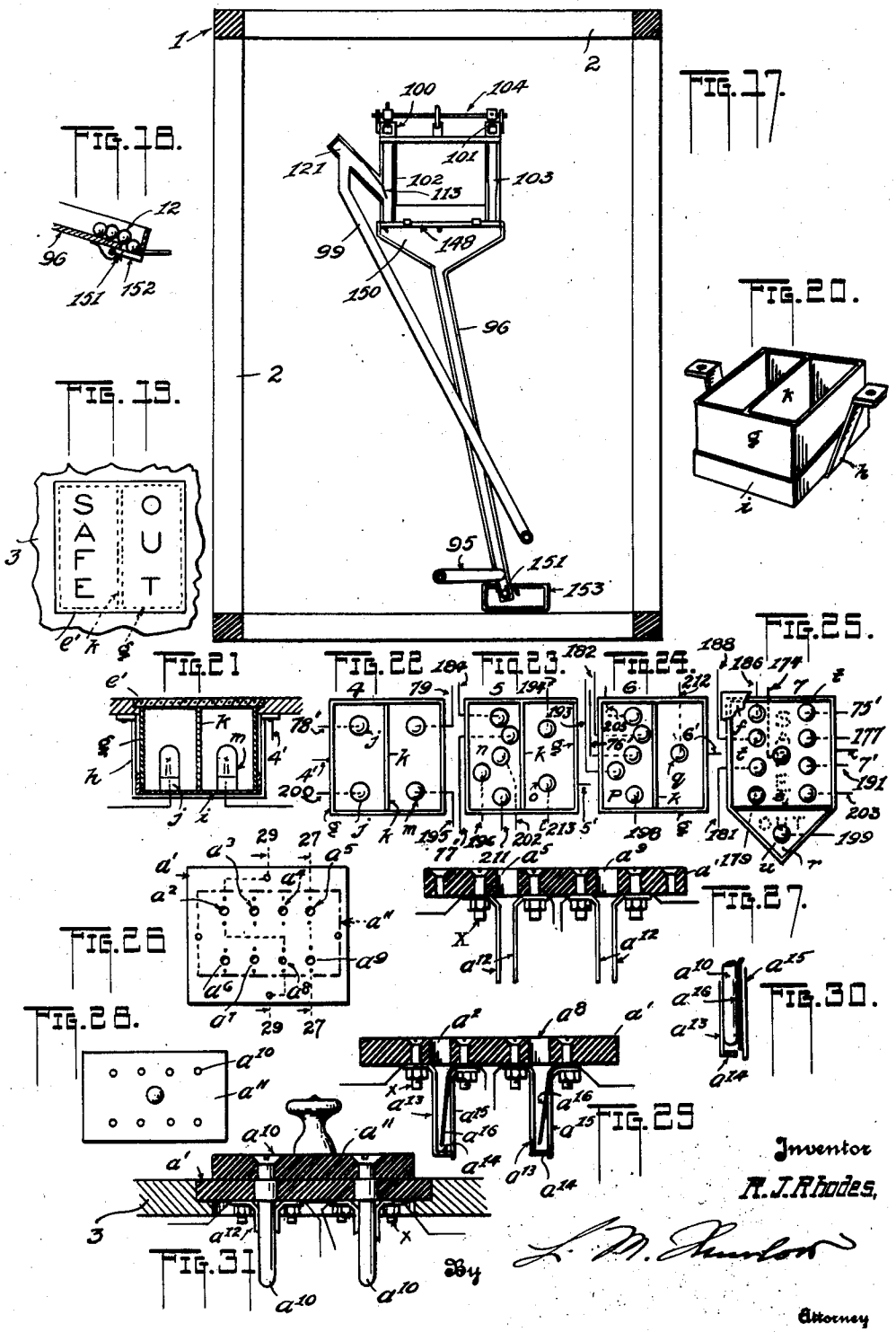
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BASEBALL PLAYING APPARATUS

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BASEBALL PLAYING APPARATUS

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FIG. 32.

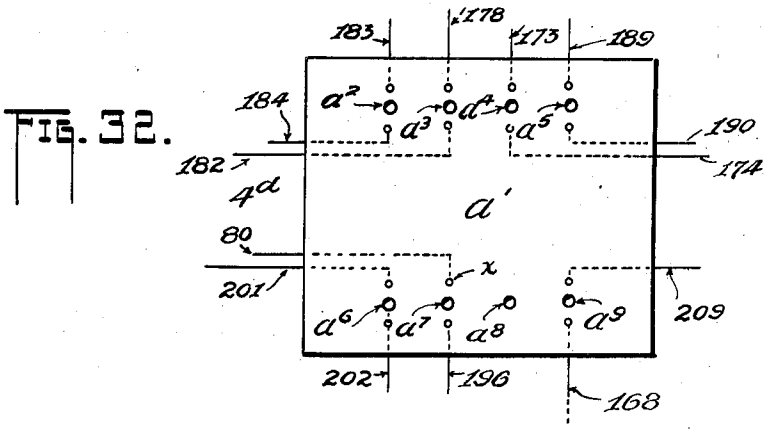


FIG. 33.

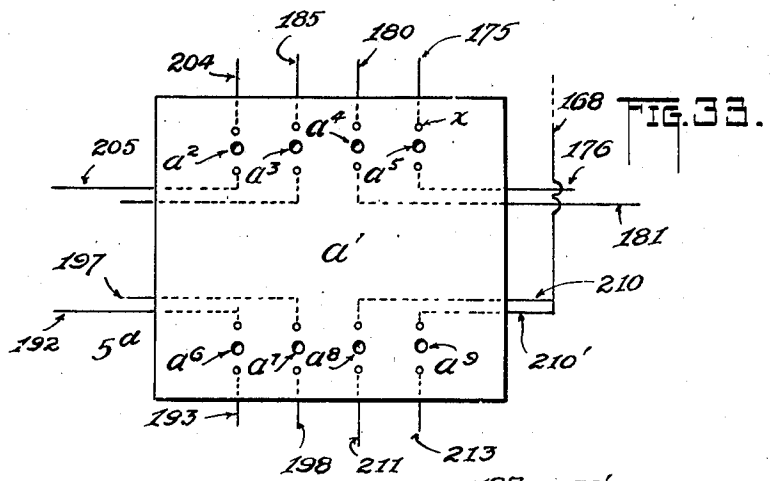
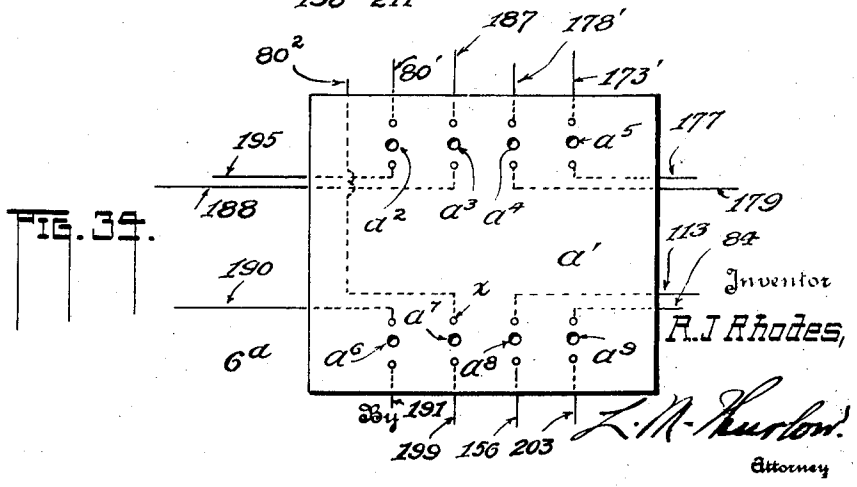


FIG. 34.



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BASEBALL PLAYING APPARATUS

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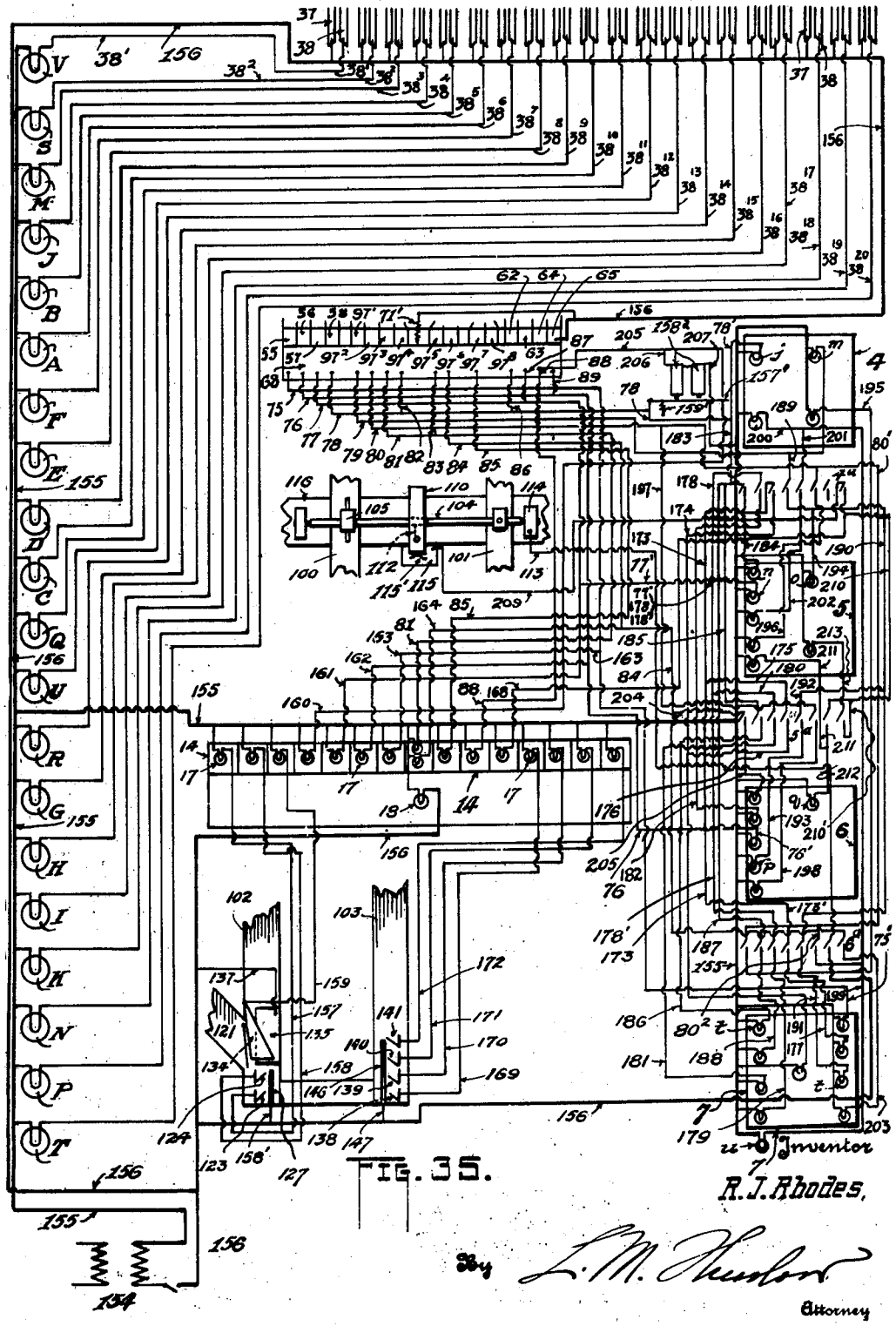


FIG. 35.

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Patented Mar. 5, 1935 1,993,075

UNITED STATES PATENT OFFICE

1,993,075

BASEBALL PLAYING APPARATUS

Roy J. Rhodes, Peoria, Ill.

Application May 23, 1932, Serial No. 612,893

42 Claims. (Cl. 273—88)

This invention has reference to an apparatus for use in playing the game of baseball. More particularly, it relates to an apparatus to be set up in the home, or in public places such as hotels, clubs and the like, and so constructed and arranged as to make apparent to players and observers alike all plays as they would be presented in the outdoor game.

Objects of the invention are, to provide an apparatus in which may be seen all of the plays that happen on the usual outdoor ball field including signals indicating number of pitched balls, the number of strikes, steals, errors, singles, doubles, triples and home runs, together with the position of a player or players at bases; to indicate by signals each pitched ball in sequence and each strike in sequence and position of batted balls on the field; to indicate visually the several plays and occurrences in the game; to provide a series of current conducting runways each of which runways corresponds to one of various results during the playing of the game and using therewith a rolling contact current conductor in the form of a ball to electrically connect the parts of any one of the runways for closing a circuit through a signal at the playing field; and to automatically indicate the advance of players to bases.

Other objects will appear in the following description with the aid of the accompanying drawings which show a preferred form of my apparatus, the structure, however, being susceptible of minor changes, or such changes as may be considered to lie within the invention and the claims to follow.

Figure 1 is a plan of my invention produced about one-fourth size showing the playing field for baseball. Figure 2 is a side elevation of the same with parts broken away to show construction. Figure 3 is an elevation of parts shown in Figure 2 produced on a larger scale. Figure 4 is an end elevation of part of the invention as seen from the player's position, certain parts being broken away to reveal details of construction produced on line 4—4, Figure 1. Figure 5 is a plan of a ball distributor produced on a scale about one-half actual size. Figure 6 is a longitudinal sectional elevation of the ball distributor of Figure 5 produced on line 6—6 of that figure. Figure 7 is a plan of a "hit-rack" shown in said elevation in Figure 2. Figure 7a is an elevation in detail of certain parts shown in Figure 7. Figure 8 is an end section of members of the runways shown in Figure 7, much enlarged, showing a ball resting thereon. Figure 9 is an enlarged section of a ball release arrangement illustrated in Figure 7. Figure 10 is a detail in elevation of a field lamp as mounted upon and depending from the member constituting the playing field shown in Figure 1. Figure 11 is a detail, as viewed in plan, of parts illustrated in Figure 7. Figure 12 is a plan of parts shown in side elevation in Figure 2. Figure 13 is a side elevation, in detail, of parts shown in Figure 12. Figure 14 is a transverse sectional elevation of a runway shown in Figure 12 on line 14—14 thereof. Figure 15 is a transverse sectional elevation of the runway of Figure 12 on line 15—15 thereof. Figure 16 is a detail, in perspective, of parts shown in said Figure 12 and in Figure 14. Figure 17 is a plan, on a reduced scale, of certain parts shown near the bottom of Figure 2. Figure 18 is a longitudinal section of a terminal portion of a ball though shown in Figure 17 illustrating a ball release mechanism. Figure 19 is a plan of a cover-glass let into the surface of the playing field shown in Figure 1. Figure 20 shown in perspective one of certain enclosures for containing lamps to be let into the surface of the playing field at certain of the "bases" thereof. Figure 21 is a vertical section of the cover glass of Figure 19 and the enclosure of Figure 20 combined. Figures 22, 23, 24 and 25 are plans of enclosures for lamps at "first base", "second base", "third base" and "home plate" respectively, of the playing field. Figure 26 is a plan of a switch-base used at each of several of the bases on the playing field. Figure 27 is a vertical transverse section, full size, of Figure 26 on line 27—27 thereof. Figure 28 is a plan of a plug-in plate used with the switch-base of Figure 26. Figure 29 is a transverse section of Figure 26 on line 29—29 thereof, shown full size. Figure 30 is an elevation of parts shown in Figure 29 illustrating a different position thereof from that shown in that figure. Figure 31 is a vertical section of parts shown in Figure 27 combined with the plug-in plate of Figure 26, enlarged as compared with the latter figure. Figures 32, 33 and 34 are plans of three switch-bases, one of which is shown in Figure 26 illustrating conducting wires connected therewith, and Figure 35 is a diagram of the electric wiring as employed in my apparatus, including the several devices with which the wiring is connected.

In Figures 1, 2 and 17 a suitable framing is illustrated as a support for the entire mechanism of my invention. It may include, for example, four or more standards 1 and suitable bracing elements 2, and has a suitable top 3 forming a table whose upper surface is employed as the "field" on which to play the game of baseball.

Upon said surface at 4, 5, 6 and 7 are arranged the usual "first", "second" and "third" bases, and "home plate" respectively. At 8 as the usual position of the "pitcher's box" is an opening extending through the top 3. Rearward from said opening 8, and rearward of second base at 5, is a second opening 9 located in what is known as "out-field" of the out door game. As shown in Figure 2 an inverted arcuate runway 10 of metal, for example, extends between the openings 8, 9, below the table top, this being enclosed between a pair of walls 11 and forming with said runway 10 a chute for the travel of balls 12 used in the game. At the opening 8 the end of the runway 10 terminates at the playing field or at the table's upper surface, and lies at that side of such opening lying nearest "home-plate". The other end of such runway lies at that side of the opening 9 that is most distant from the opening 8 and extends somewhat above the surface of the field, being suitably supported by a structure 13 for example. It is clear that a ball placed upon the extended runway at 9 will follow the same and emerge at the opening 8 upon the field, the momentum of the ball carrying it toward and beyond the usual catcher's position and to and into a "ball distributor" shown in Figures 4 and 5, the same lying beneath a scoreboard 14 erected above the playing field 3, and shown in Figures 1, 2 and 4. Said score board consists in this instance of a box-like structure extending across the end of the field in raised spaced relation thereto. It is provided at its front with a series of transparent plates 15 bearing the following legends from left to right—"Strike 1", "Strike 2", "Strike 3", "Single", "Double", "Triple", "Home run", "Fly", "Out", "Foul out", "Error", "Steal", "Ball 1", "Ball 2", "Ball 3", "Ball 4", and the same may be read in like sequence on Figure 35, denoting types of plays and occurences. Each plate 15 covers a separate compartment 16, but one of which is shown, Figures 1 and 2, each supplied with a lamp 17 to be lighted automatically as will appear later herein, but one of such lamps being shown, see Figures 1 and 2. The transparent plate "Fly" "Out" however, covers two lamps 17. A "tell-tale" light at 18, Figure 4, is employed as part of an electric circuit by which to indicate that the apparatus is in proper condition for operation electrically, and all of the lamps at one side are connected to a common conductor 155 leading to a current source.

Ball distributor

Beneath the score-board is a cavity 19 extending across part of the middle width of the field, and centrally located in said space are spaced partitions 20, 21, 22 and 23 which lie upon a downwardly slanting member 24, see Figures 2 and 6. In line with the home-plate 7 is an entrance between the partitions 21, 22, the rear ends of which are joined to form a pocket 21', there being a hole 25 opening through the member 24 at the inner or lower end of such pocket for the passage of a ball entering the latter. Rearward of this pocket 21' in line with the hole 25 is a hole 26 lying within a pocket 27 created between the partitions 20, 23. Finally, an abutment 28 lies within the cavity 19 touching its side walls and extending to the rear of the member 24 creating a third pocket 28' at the rear of which, in line with the holes 25 and 26, is a hole 29. A ball leaving the opening 8 as released by the player at the opening 9 may enter any one of the three pockets and from there pass to a certain "hit-rack", as I shall term it, or to a certain "stealing mechanism", both of which will receive attention later. In Figures 2 and 6 it is to be noted that beneath the holes 25, 26 and 29 are tubes 31, 32 and 33, respectively.

Returning now to the playing field, certain batted ball positions are each to be indicated in playing the game by lighting electric lamps in an automatic manner, as will be explained in the operation of the apparatus, the manner of mounting of the lamps being shown in Figure 10. A transparent plate or disc *a* is let in the surface of the field and beneath it is a hole *b* to receive a tube *c* within which is a lamp *d*, the whole being supported in position by a yoke *e*, certain electric conductors to be described being provided for supplying the several lamps with current. One of these lamps is placed at each of the positions A, B, C, D, E, F, as "infield" positions, on the field 3. Again, one is placed at each of the positions G, H, I, "foul" positions. One is placed at each position J, K, indicating "singles", one is placed at each of the positions, M, N for "doubles", one at P, indicating "error", one at Q, "right field", one at R, "left-field", one at each of the positions S, T for "triples", one at U for "center field", and one at V indicating "home run". All of the lamps at these positions are connected at one side to the named common lead 155, see diagram Figure 35.

The bases 4, 5, 6, 7 are likewise provided each with lamps by an arrangement shown in Figures 19 to 25 inclusive. That is to say, in said Figure 19 a square of transparent material *e'* is let into the playing surface 3 at each of the positions 4, 5, 6 and one of a slightly different shape *f* is placed at the position 7, "home plate", as indicated in Figure 1. A hole is made in the playing field board at each of the named positions and each receives a lamp box. At bases 4, 5, 6 the boxes denoted at *g* are of cube form, in this instance, Figures 22, 23 and 24, an open side thereof abutting a transparent member, see Figure 21, being held in position by a bail *h* and a detachable bottom *i* each of the latter carrying lamps with which electric wires are connected as will appear. Each of the boxes has a center partition *k* dividing the space thereof into two compartments. At the first base position 4 one compartment of the box *g* contains two lamps *j*, while the other has two lamps *m*. The second base box at 5 has five lamps *n* in one compartment, and two lamps *o* in the other. Again, the third base box at 6 has five lamps *p* in one compartment and one lamp *q* in the other. Respecting the "home plate" at 7 the box therefor, Figure 25 has an angular space *r* separated by a partition *s* from the larger space thereof, the latter containing nine lamps *t* and the said angular space has one lamp *u*. The transparent member *f* thereof where it covers the last mentioned space carries the word "out" while above the other space appears the word "safe". Also, each cover plate *e* of the other boxes described carries the words "safe" and "out", one at each side of the partitions of said boxes in order that when a lamp is lighted in either space the word thereabove is made readable. One terminal of each lamp of all of the boxes is electrically connected with the metal of its particular box, the wires leading to the boxes being indicated respectively by 4' for the box at 4, by 5' for box at 5, by 6' for the box at 6, and by 7' for the box at position 7, all such wires being connected with the named common conductor 155, see Figure 35.

The wires leading to the other side of the several lamps will be identified later in the description. As an aid in properly identifying the several boxes in Figures 22, 23, 24 and 25 they are designated in general, only, by the characters which denote their positions at bases on the playing field, namely 4, 5, 6 it is to be noted that there is also placed near each of these several positions, what I shall term a "switch base". These are severally denoted by 4^a, 5^a and 6^a, respectively in Figure 1. They are each let into the playing surface and each of these comprises a member a' of insulating material denoted in Figures 27, 29 and 31, and each has eight holes a^2, a^3, a^4, a^5, a^6, a^7, a^8 and a^9 therein through which to insert the plug a^{10} of a "plug-in" plate a^{11}, see Figures 28, 31, 32, 33 and 34. The holes of all of the switch bases 4^a, 5^a and 6^a will be identified by the same reference character as above, for convenience and expediency and for a clearer understanding, all such references being used in the same order in each base and in the diagram Figure 35. Beneath and attached to each member a' at each of the named holes by bolts x, for example, are pairs of spaced spring contact-strips a^{12} to receive between them the said plugs a^{10}, certain of them being not unlike those used in common practice in switch bases. These pairs of strips a^{12} for convenience in the description of the operation will be referred to as "open switches". In Figures 29 and 30 another type of contact strip is shown and this form will be referred to as "closed switches" for convenience also. This type is used in conjunction with the first named type on each of the switch bases 4^a, 5^a, 6^a only at the bases 5, 6, i. e., second and third bases, though differently arranged on each. It is noted that a strip a^{13} in said Figures 29 and 30 is disposed in the same way as any one of the named strips a^{12}, but in addition, it has, in this instance, an extension a^{14} disposed so as to receive contact of a companion strip a^{15}, the two being normally in contact forming a "closed switch". In addition, an insulating strip a^{16} is interposed between the two contact strips and is held by one of the named bolts x as an example. The entrance of a plug a^{10} between the insulating strip and the strip a^{13} separates the two strips a^{13} and a^{15} and the said insulating strip prevents contact of the plug with the adjacent strip a^{15} against which the insulating strip lies. By such an arrangement as described a common "plug in" plate a^{11} as above, provided with a full complement of plugs a^{10}, can be used with any one of the switch bases without respect to the varied arrangements of the "closed" and "open" types of contact strips.

Hit rack

The hit rack illustrated in plan in Figure 7, and in elevation in Figure 2, comprises a board 30 having a raised rim 34 around its edge for retaining played balls thereon. Said rack lies centrally of the frame structure 1, 2, being inclined at an angle downwardly toward the end of the structure at which the player is stationed, or that position nearest the opening 9 at the chute 10. At its upper end the board is provided centrally with an A-shaped divider 35 whose apex lies just rearward of the position of the tube 31 described in connection with Figure 2. For a considerable area at each side of and downwardly from the divider is a series of deflector-pins 36 set in staggered relation. The ball after leaving said divider is shunted back and forth laterally in its movement down the board emerging, therefore, at no definite or fixed point. Below said series of pins is a series of runways any one of which may receive a ball upon it, said runways lying parallel to the longest measurement of the board, in this instance. The structure of the runways is best shown in Figure 8. Each consists of two spaced metal members 37, 38 suitably erected upon the board 30 and insulated from each other in pairs by a space, for example, as shown. The members are spaced apart a distance but slightly less than the diameter of a ball 12 so that the latter will be supported quite near its center line about as shown in Figure 8. It is observed that the runways lie closely adjacent to each other. That is to say, a member 37 of one runway lies close to a member 38 of an adjacent runway, being separated from each other by an insulating strip 39, the several strips extending upwardly beyond the member 37, 38, acting as dividers for guiding a ball 12 upon a runway between any two of them. Figure 7^a illustrates the relation of the parts in elevation, it being noted in this figure that the members 37, 38 are cut at an angle, as 40, so that the ball may readily mount them in its descent upon the board. Beneath the board 30 at the lower ends of the members 37, 38 a metal strip 41 is preferably installed, to which a conductor 42 is connected, all of the said members 37 only, being connected electrically with the said strip by means of bolts 42', for example, there being twenty of such members so connected. To each of the twenty companion members 38 are separately connected through a cable, not shown, wires $38'$, 38^2, 38^3, 38^4, 38^5, 38^6, 38^7, 38^8, 38^9, 38^{10}, 38^{11}, 38^{12}, 38^{13}, 38^{14}, 38^{15}, 38^{16}, 38^{17}, 38^{18}, 38^{19}, 38^{20}. It is now to be understood that with the strip 41 and the wires just described connected with a source of current the passage of a ball 12 over any one of the runways will close an electric circuit through any one pair of said members 37, 38 thereof, to produce a result at the playing field as will appear in the description of the operation and in connection with the wiring diagram of Figure 35. Farther down the board 30 are metal guide members 43, 44, 45, 46, 47, 48, 49, 49^1, 50, 51, 52, 53, 54, 55, reading from left to right of the drawings, Figure 7. These guide members extend in the same general direction as the members 37, 38 and create passageways 55', 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, reading again from left to right, the two outermost passageways 55' and 65 lying between the raised rim 34 and the guide members 43 and 54 respectively. The lower ends of all these guide members 43 to 54, both inclusive, are electrically connected by a metal strip 67, for example, which lies beneath them upon the board 30, see Figure 9 particularly. Extending across and upon the named members 43 to 55 inclusive, is a strip 68 to which a door 69 is hinged for closing the outlets of the several passageways between said members. The inner surface of the door has a metal facing 70 and an eye 71 is carried by said door and has electrical connection with said facing 70. A spring 71' is attached at one end to the eye, and at its other end it engages electrically, the guide member 48, for example. Hingedly suspended from the strip 68 in each of all of the guideways but one is a metal flap 72 adapted to abut a pin 72' carried by the door, said pin being electrically connected with the facing 70. The several flaps, however, normally hang free of and out of contact with said pins 72. A cord 73 is

attached to the door and extends to a pull-rod 74, see Figure 2, near the player's position. Conducting wires 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89 are shown in Figure 11, each of which will carry current separately from one of the flaps 72, while a conductor 90 carries current to the named metal strip 67, both the conductors 90 and 42 having connections with a lead wire 156 connected to a source of current at 154, Figure 35. Normally no current can flow from the hinged flaps since, as already stated, the flaps hang free of the pins 72'. A ball 12, however, having entered any one of passageways, and reaching a position shown in Figure 9, upon touching the strip 67 and the flap 72 will complate the circuit from said strip 67 through the ball to the particular conducting wire connected to that flap. In order to insure a flow of current at this time the weight of the ball carried the flap against the pin 72' as that current may also flow from the spring 71' to the facing 70, thence through that member and pin 72' to said flap. The result of closing a circuit in this way is that a lamp is lighted at any one or all of the bases 4, 5, 6, 7, or at the score board 14, or both. The purpose of the particular arrangement described, or its equivalent, is that of providing a double means of insuring a closed circuit when the ball 12 reaches the vicinity of the strip 67. Even though the ball's surface by chance may carry particles that might prevent current flow a closed circuit will be positively made by the weight only of the ball upon the flap causing the latter to contact the pin 72'.

The board 30 terminates in a hopper portion 92 for the reception of the played balls and has a pocket 93 provided with an opening 94 in its bottom leading into a tube or chute 95 which overhangs at its outlet a trough, 96 as part of the apparatus shown in Figures 2 12 and 18.

It is observed in Figure 7 that the pair of guide members 47, 48, and the pair 49, 49' and the pair 50, 51 are widely spread at their upper ends to form separate passageways into which certain of the runways 37, 38 open, and also that their lower ends are spaced, as well, to embrace certain short spacers 97 which divide the lower spaces into small passageways $97'$, 97^2, 97^3, 97^4, 97^5, 97^6, 97^7, 97^8. In each of the passageways, except the last named one, is one of the described flaps 72. Also it is noted that there is a hole 98 in the board 30 within the passageway 97^8 in place of one of the flaps 72. This opening communicates with a chute 99, of a stealing mechanism on a strike and ball rack also shown in Figures 2, 12 and 17, the structure of which figures is now to be explained.

Stealing mechanism and strike and ball rack

In Figure 12 two vertical chutes 100, 101 are shown. Into the top of the chute 100 is directed the tube 32 of Figure 2, and into the other the tube 33 of the latter figure. The lower ends of the chutes 100—101 terminate above troughs 102 and 103 respectively which are downwardly slanted toward the player's position.

Rotatably mounted across the chutes at one side thereof is a shaft 104 having hubs 105, 106 said hubs each being provided with a pair of fingers extending from diametrically opposite sides thereof, those for the hub 105 being indicated by 107 and those for the hub 106 by 108. Said hubs are fixed to the shaft in positions in which the fingers of one will lie in a line at right angles to the line of the others, said fingers in their rotation with the shaft passing into and out of the chutes through openings 109 in the walls of the latter. Mounted on the shaft is a drum 110 of non-conducting material having a metal contact portion 111, Figure 3, electrically connected at 112 with the shaft 104, a conductor 113 being electrically connected with the shaft through one of the bearings 114, for example. A member 115 is pivoted or hinged on a part 116 of the structure and a spring 117 holds the same elastically in the direction of the drum, there being attached to said member 115 a spring contact strip 115' in position to touch the contact portion 111, during a certain period in the rotation of the drum. A weight denoted at 119 on the drum is so located as to hold said drum in a position where the contact portion 111 is normally out of touch with the contact strip 115'.

Considering the two troughs 102, 103, which are braced by a member 119', the trough 102 has an opening 120 in one of its sides into which opens a trough portion 121 as part of the trough 99 previously mentioned in connection with the hit rack of Figure 7. Figures 12 and 13 show supporting members 122 for the sides of each of the troughs, and see also Figures 14, 15 and 16. Each member 122 supports one of the trough sides and said sides form a ball guideway. Near the extreme lower end of the trough 102 is a supporting member 122' fixed to which are two spring contact-strips 123, 124, whose upper edges are at an elevation about level with the bottom of the trough, Figure 13. Each of the strips 123, 124 lies close to metal strips 125, 125' respectively, with which said strips 123, 124, by the weight of a ball thereon, are adapted to have contact. Opposite the strips 123, 124 is a strip 127 with which the ball also has contact, and connected with the strip 125, 125' are conductors 157 and 158 respectively. The strip 127 is connected by wire 158' with the conductor 156 of the source of current at 154. At the opening 120 of the said trough 102 is hinged a gate 133 for closing said opening but said gate is adapted to swing into said trough. Within the trough and out of reach of the hinge of the gate 133 is a spring contact member 134 beneath which is a strip 135, the two being normally separated, a conductor 159 connected to said strip 134 extending to the score board 14, while a conductor 137 at the strip 135 is connected to the named conductor 156. Contact of the two portions 134, 135 is made by the weight of a ball passing over said member 134 as said ball travels toward the strip 123, 124.

In the opposite trough 103 spring contact members 138, 139, 140 and 141 are erected in the same way as the members 123, 124 connected with which are conductors 169, 170, 171 and 172, respectively, which are connected in turn, with strips 169', 170', 171', 172' connected to certain lights on the score board at 14. A contact strip 146 lies opposite the members 138, 139, 140, 141 to receive contact of such members and a conductor 147 attached to said strip 146 is connected with the lead wire 156. As in the other instance the passage of a ball over the several contact members last named closes circuits from the latter through the strip 146.

Abutting the ends of the troughs is a door 148 hinged to the previously mentioned member 119', there being a cord 149 attached to the front of said door and extending to the pull-rod 74 of Figure 2. A spring 148' is attached to the back of the door and secured at its other end to the

part of 116, for example, by which spring the door is held normally closed. Also attached to the back of the door is a cord 148^2 which is attached to the member 115 at the drum 110 in such manner that when the door is opened the contact members 115' on said member 115 will be drawn away from the wheel permitting the latter to assume the position shown in Figure 3 due to the weight 119. The trough 96 previously mentioned, see Figures 7 and 17, terminates at the end in a hopper 150 which hangs beneath the door 148, receiving balls from the troughs 102, 103. The trough 96 is inclined toward the player's end of the apparatus and as shown in Figure 18 has an opening 151 in its bottom closed by a valve 152. This trough is the final receiver for all played balls passing through the apparatus, it being remembered that certain balls on the hit rack 30 enter said trough 96 through the chute or tube 95 of said rack. The valve 152 when opened by the player permits delivery of the balls into a suitable receptacle 153 from which they may be removed for further plays.

In Figure 35 the entire wiring for the apparatus is shown as well as enough of the different parts of the latter to make the connections clear, the reference characters thereon agreeing with those used in describing the other figures. In connection with said Figure 35, the current source may be a stepdown transformer 154 supplying current to the apparatus through conductors 155, 156 before referred to and at 157' is illustrated an electric switch operated by a magnet 158^2, said switch being employed to make and break certain electric circuits as will appear, a spring 159' serving to elastically hold the switch normally in a given position.

In Figure 4 the lamps 17 of the compartments of the score board 14 are indicated diagrammatically, it being observed that the transparent plate bearing "fly", "out" has two of the lamps. All of the lamps including the tell-tale lamp 18 are connected at one side with one of the main lead wires, 155, connected with the source of current, i. e. the transformer 154, Figure 35. The other side of the lamp 18 is connected to the wire 156 leading directly to the transformer so that said lamp remains lighted when the circuit through the apparatus is closed.

Upon closing the circuit through the transformer the mechanism is ready for operation, the tell-tale light at 18 denoting a closed operating circuit, as stated. Two persons may play the game and are naturally opponents. A ball 12 started down the runway 10 at the opening 9 emerges from the opening 8 at the pitchers position, as explained rolling toward and into the ball distributor, Figure 5, between the partitions thereof within the cavity 19. Should the ball enter the center opening between the partitions 21, 22 it will drop through the hole 25 upon the "hit-rack" 30 through the tube 31. On the other hand, if it enters the opening between the partitions 20 and 21, or between partitions 22 and 23 it will drop through the hole 26 and the tube 32 into the chute 100, Figures 2 and 12. Again, if the ball enters the opening or cavity 19 at either side of the group of partitions 20, 21, 22, 23 it will drop through the hole 29 and the tube 33 into the chute 101. Following a ball, now, that may have reached the hit rack 30, said ball may pass to either side of the divider 35 and upon reaching the pins 36 be shunted back and forth thereby until in its course down the board it will pass upon any one of the runways made up of the space members 37, 38, Figure 8. Any one of the twenty guideways made up of the said spaced members 37, 38 may receive the ball, and, depending upon which of them the ball may traverse, said ball may be delivered into any one of the passageways 55', 56, 57, 58, 65 and any one of the passageways 97', 97^2, 97^3, 97^4, 97^5, 97^6, 97^7, at the door 69, against a flap 72. Or, on the other hand, it may pass into the passageway 97^8 and pass through the opening 98 leading to the trough 99, Figure 17.

It is clear from the above that from the time of the "delivery" of the ball to and including its movement through the hit rack its final destination is wholly uncertain making the game very interesting with the final result most problematical. Now, it is one of the purposes of the invention to indicate the result of plays on the playing field 3 and at bases, as well as on the score board at 14 by means of signals, preferably visual, by lighting lamps as previously stated. A "batted" ball when it mounts the members 37, 38 closes a circuit through the transformer 154 and lighting a lamp on the said field, such as *d*, Figure 10. The conducting wires from the several pairs of members 37, 38 are so connected as to cause a lamp to be lighted in any one place on the field depending upon the ball's course through the hit rack, including the runway it may chance to enter. It is desirable when a lamp is to be lighted to show any one of the positions upon the field to which a ball is supposed to have been batted that said lamp will remain lighted for an appreciable length of time. To this end, therefore, the spacing of the members 37, 38 is such that the ball 12 though having considerable momentum can move but slowly down the inclined members referred to due to the reduced circumferential surface in contact with rack members. Thus, sufficient time is given observers at the playing field to determine the result, visually, as to the position of a batted ball on the field.

That there may also be an extended time of illumination at the bases 4, 5, 6, 7, a ball pocketed at the door 69 of the hit-rack 30 closes circuits through the means already described, such illumination continuing as long as the ball lies at said door, or until the such door is lifted to release any balls after "hits" or "outs".

The wire 156, Figure 7, conducts current to the conducting strip 67 from the transformer 154, thence to and through the ball 12 and finally to a flap 72 to any one of the conducting wires on the non-conducting strip 68 that may correspond with that flap.

Beginning at the left of said Figure 7, the first passageway 55' corresponds to, or is identified with "home run" on the score board 14. A ball entering that passageway will complete an electric circuit from the transformer 154 through the wire 75 on the strip 68 to one of the lamps *t* in the base 7 (home plate) for "safe" by wire-connection 75'. Connected to said wire 75, see Figure 35, is a wire 163 leading to a lamp 17 in "home run" compartment of the score board. Thus both the named lamps are lighted by a completed circuit through the main conductor 155 and transformer 154, one side of all of the lamps of the base 7 being connected to the latter by wires 7' of the base-box, see Figure 25. In this connection it will be remembered that earlier herein it was stated that the boxes of all of the bases 4, 5, 6 are likewise connected with the return wire 155 by wires 4', 5', and 6' re-

spectively. Just previous to this lighting of the named lamps a ball 12 that has passed down the members 37, 38 of the runway lying directly above the passageway 55 has caused the "home run" lamp V on the field 3 to be lighted due to the fact that the member 38, and the wire 38' leading to one side of this lamp carry the current through the ball from members 37 back to the transformer. As a general statement, it may be said that when a "home run" is made as above, only the compartment in "home plate" 7 is lighted, or that denoting "safe", it being understood, of course, that any base runner occupying bases 4, 5, 6 would score ahead of the batter.

A ball 12 moving down the next adjacent runway, or that above passageway 56, will light field lamp at S for "triple" through wires 156 and 42, a wire 38^2, and the ball upon finally passing to the strip 67 will cause current to flow to wire 76 through a flap 72 to one of the lamps *p* in base 6 through its connection to wire 76', thence to wire 162 lighting the lamp 17 in "triple" compartment of the score board. Attached to the wire 76 is also a wire 173 connected to one side of the switch a^4 in switch base 4^a, the other side of said switch having connection by wire 174 to a separate lamp *t* in "home" plate 7. Also attached to wire 173 is a wire 175 leading to a switch a^5 in switch base 5^a. The other side of the switch has a wire connection 176 leading to the named wire 174. This connection in effect advances a runner from second base 5 to base 6, a plug-in plate being in position at base 5 for the purpose.

The plug-in plates *a''*, of which there may be three, when used in conjunction with the switches of the switch bases serve the purpose of closing certain circuits and opening others with the result that supposed runners at bases advance to other bases according to the plays shown by lights. In other words, the plug-in plates, in effect, represent runners advanced to bases and when inserted complete other circuits ahead for plays to follow, and at the same time they prevent plays that are not in accordance with regular base ball, as, for instance, they prevent operation of the stealing mechanism when runners are not on bases. That is to say, if a plate is plugged in at third base 6 the circuit is broken to the stealing mechanism so that the operation of that mechanism is prevented. By this means complicated "plays" are avoided. Since the named mechanism is designed to take care of a "steal" of second base 5 by a runner on first and second bases 4 and 5 it is necessary that a plate be plugged in at first base 4 to make said mechanism operative. If a plate is also plugged in at second base 5 the runner on third base 6 is "out". It is therefore necessary that a plate be inserted at said third base 6 to prevent these plays since the game does not provide for the advancement to "home plate" 7 of a runner from third base 6.

The wire 173 continues to switch a^5 on switch base 6^a by a wire 173' at said switch while the other side of the latter is connected by a conductor 177 to one of the lamps *t* in base 7 for "safe", advancing a runner from base 6 to base 7, a "triple" hit by the batter lighting "safe" at base 6. Therefore, if supposed runners occupy bases 4, 5, 6, resulting from previous plays, a plug-in plate *a''* will have been inserted in any one or all of the switch bases 4^a, 5^a and 6^a. The electrical connections thus formed through any one of the switches by this insertion lighting "safe" in base 7, the "open" type switch only having been affected closing the several described circuits, no current having flowed through any of the switches other than those just described. Consider now, passageway 65 at the extreme right of Figure 7, which is also a "triple". A ball entering the runway thereabove will have closed a circuit through strip 41 and wire 38^{20} lighting lamp T "triple" on field 3. The ball 12 thereafter upon reaching the strip 67 causes a flow of current through wire 89 on strip 68 to wire 76 which has the effect of producing the same result as above outlined. The runway above the passageway 57 by means of a ball thereon will close a circuit from strip 41 through wire 38^3 to lamp M "double" on the playing field, the ball finally connecting strip 67 and wire 77 by which current is closed through a lamp *n* "safe" in base 5 through branch wire 77'. Attached to wire 77 is a wire 161 leading to a lamp 17 in "double" compartment of the score board 14, there being also connected with wire 77' a wire 178 leading to switch a^3 of switch base 4^a, said wire 178 continuing to and being connected to the switch a^4 at switch base 6^a by wire 178'. The opposite connection of switch a^4 at switch base 6^a connects to still another lamp *t* in base 7 by wire 179. From wire 178' a wire 180 leads to switch a^4 in switch base 5^a. From the other side of that switch a wire 181 leads to another lamp *t*, "safe", in base 7. From switch a^3 on switch base 4^a a wire 182 leads to a lamp *p* in base 6. The result of these several connections is that a ball 12 lights a lamp in "safe" compartment of base 5. If from previous plays a runner is on base 4 with a plug-in plate *a''* in position in that base, an electrical connection is made in "safe" compartment of base 6. Also, in previous plays if a plug-in plate *a''* has been plugged into either switch base 5 or 6 the electrical connection made would light "safe" compartment of base 7.

A ball traversing the runway 37, 38 above passageway 63 will, through strip 41 and wire 38^{18}, light the lamp N "double" at playing field 3, and, upon reaching strip 67 completes a circuit through wires 87 and 77 resulting in showing "double", or the sample play as last above, through the same lamps.

The runway above passageway 58, through a ball 12 will close a circuit through strip 41 and wire 38^5 the latter leading to lamp J "single", on the field 3. Following this, the ball closes a circuit through the strip 68 and wire 78 to light a lamp *j* "safe", in the base 4 through a wire 78' at said lamp. Connected to wire 78 is a wire 183 leading to switch a^2 in switch base 4^a, said wire 183 continuing in a wire 184 to a lamp *n* in base 5 indicating "safe". Attached to wire 183 is a wire 185 leading to switch a^3 in switch base 5^a, the other side of the latter connecting by wire 186 with a lamp *t* in base 7. To wire 183 is connected a wire 187 attached to switch a^3 in switch base 6^a, the other side of this switch having connection with a lamp *t* "safe" in base 7 through wire 188. Connected to wire 78 is the armature-switch 157' at the named magnet coils 158^2, the same being normally held in contact by its spring 159' with the wire 160 leading to lamp 17 in "single" compartment of the score board 14, this lamp being lighted. The previous closing of the circuit in passageway 58 has thus lighted said lamp at the score board, and has lighted "safe" in base 4. If during previous plays plug-in plate *a''* has been inserted in switch base 4^a then "safe" compartment at base 5 will be lighted. Also, if in previous plays plate *a''* is plugged into either

switch bases 5^a or 6^a, or both, then "Safe" compartment in base 7 is shown. In other words a supposed man on first base 4 arrives at second base 5 safely, and a man on second base 5 and one on third base 6 would score.

Above passageway 59 between the members 46 and 49 are six separate runways each made up of members 37, 38 as before, all of which runways represent any one of various infield positions to which a ball may be hit. A ball passing down the first of these closes a circuit through strip 41, wire 38^5 and field lamp B, "Infield". The circuit closed by a ball 12 in the next runway of the named six is closed through the strip 41 and wire 38^6 to lamp A, "Infield", on the field. The third runway of the series will close a circuit through the lamp F "Infield" on the field 3 through wire 38^8. Likewise the fourth will close a circuit through the lamp E "Infield" on the field 3 through wire 38^8, and at the fifth runway the lamp D "Infield" on the field is lighted through wire 38^9. The last of the six mentioned runways will close a circuit through the field lamp C "Infield" by wire 38^{10}, all six runways discharging into the passageway 59. A ball leaving the latter passageway may enter any one of the pockets $97'$, 97^2, 97^3 or 97^4 with no certainty, of course, as to which may receive it. If the ball enters the first of these, a circuit is closed as before through the strip 67 and wire 79 which lights a lamp m in base 4 showing "Out". Connected to wire 79 is a wire 189 leading to switch a^5 in switch base 4^a. The other side of the switch is connected to wire 190 by a wire 192 leading to switch a^6 in switch base 5^a and from this switch leads a wire 193 connected to a lamp p in base 6 for "Safe". A wire 194 is connected to wire 190 leading to a lamp o in base 5. Wire 190 continues to switch a^6 in switch base 6^a. Attached to the other side of this switch is a wire 191 connected to a lamp t in "Safe" compartment of base 7. Besides lighting "Out" in base 4, if from previous plays the plug-in plate a'' lies in switch base 4^a, then the "Out" compartment in second base 5 is illuminated. If a plate a'' lies in switch base 5^a then "Safe" compartment in base 5 is lighted, and if a plate lies in switch-base 6^a "Safe" is lighted in base 7, home plate. Otherwise stated, the batter is out at first base 4 and if a runner is at first base 4 he is out at second base 5 in what is termed a "Double play". A runner on second base 5 advances safely to third base 6 while a runner on the latter base "Scores".

A ball in pocket 97^2 completes a circuit through strip 67 and wires 80 to switch a^7 on switch base 4^a, said wire 80 continuing at $80'$ to a "closed" switch at a^2 on switch base 6^a, this type of switch being shown in Figures 29 and 30, and already described. Connected with this same switch a^2 is a wire 195 being thus designated since, at times, this is a separate lead connected to a lamp m in base 4. The switch a^7 of base 4^a is connected at its other side with a lamp n of base 5 by a wire 196, and leading from wire 80 is a wire 197 connected to one side of a switch a^7 of switch base 5^a. From the other side of this switch extends a wire 198 leading to a lamp p in base 6. Wire $80'$ also connects through a wire 80^2 with switch a^7 on said switch base 6^a with switch a^2 of that base. The other side of switch a^7 in base 6^a is connected by a wire 199 with the lamp u in base 7, and connected to wire 199 in a conductor 200 leading to a lamp j in base 4. Leading from wire 200 is a conductor 201 connected to switch a^6 in switch base 4^a, the other side of switch a^6 having connection with a lamp n in base 5 by wire 202. The result of the above arrangement is that "Out" compartment of first base 4 is illuminated provided that a plug-in plate a'' has not been plugged into switch base 6^a. If in previous plays a plate a'' has been plugged into switch base 4^a then "Safe" compartment of base 5 is illuminated. Also, if a plate a'' is plugged into switch base 5^a then "Safe" compartment in base 6 is lighted. However, if the plate is plugged into switch base 6^a base 4 is lighted showing "Safe" instead of "Out", and "Out" compartment in base 7 will be lighted. In other words when the batter hits the ball he is out at first base 4 provided there is no runner on third base 6. If a runner is on third base 6, first base 4 will show "Safe" and base 7 "Home plate" will show "Out". If runner is on bases 4 or 5, or both, they will advance to bases 5 and 6.

A ball entering the pocket 97^3 on the hit rack will close a circuit through strip 67 and wire 81, the latter leading to one of the lamps in "Fly" "Out" compartment of the score board 14. From the pocket 97^4 the wire 82 thereof has connection with wire 78 producing the same "Single" play at the score board and bases, as just explained, through the same connections. From the first of the two runways reading from the left above the passageway 60 current will flow through a ball 12 from the strip 41 and wire $38''$ lighting lamp Q "Right field" on the field 3, while the next runway to the right, by a ball 12, closes a circuit through the strip 41 and wire 38^{12} to light lamp U "Center field" on the field 3. The third runway lights lamp R "Left field" through the wire 38^{13}. A ball 12 entering any one of these runways passes to either of the pockets 97^5, 97^6. If said ball enters the first of these a circuit is completed through wire 84 leading to switch a^9 of switch base 6^a. The other side of the latter switch is connected by a wire 203 with a lamp t in base 7 lighting "Safe". Attached to wire 84 is a wire 164 leading to the second of the two lamps 17 in "Fly" "Out" compartment of the score board. Also connected to the wire 84 is a wire 204 leading to switch a^2 on switch base 5^a, and to the other side of the latter switch is attached a wire 205 connected to a lamp p in base 6.

A ball making contact in pocket 97^6 of the hit rack thus lights a lamp in "Fly" "Out" compartment of the score board. If plug-in plate a'' is plugged into the switch base 5^a, "Safe" is shown at base 6. If said plug-in plate is plugged into switch base 6^a then "Safe" on base 7 is lighted. In other words when the batter hits a fly to outfield which is caught by an opposing player he is retired. However, if base runner is on second base 5 he advances to third base 6 safely after the catch. In the same manner a runner on third base 6 would score after the catch.

Above the passageway 63 are three segregated runways, and, as before, a ball 12 passing down any one of them will reach any one of the pockets 97^7, 97^8. In traversing the first of the three runways, reading from left to right, a circuit is closed through strip 41 and wire 38^{14}, the latter being connected to the lamp G "Foul" on the playing field 3, while the next runway through wire 38^{15} lights the lamp H "Foul", and the third and last of the three runways lights the lamp I for "Foul" as well, through wire 38^{16}. A ball entering, now, the pocket 97^7 will complete a circuit through strip 67 and wire 85, the latter having connection with a lamp 17 in "Foul" "Out" compartment

of the score board. But if the ball drops into pocket 97^8 it falls through the hole 98 thereof, entering the trough 99, therebeneath, passing directly to the strike rack of Figure 17.

All of the runways made up of the pairs of members 37 and 38 have now been accounted for except the one lying directly in line with the passageway 64. A ball that may enter this runway closes a circuit through the wire 38^{19} to lamp P "Error" on the playing field 3, and upon reaching the strip 67 completes a circuit through the wire 88 connected to the lamp 17 in "Error" compartment of the score board 14. From the wire 88 extends a wire 205 terminating as a contact point at the armature-switch 157'. A wire 206 leads to one side of the magnet coils 158^2, the other side of the latter being connected by a wire 207 directly to the lead wire 155 extending to the transformer 154. The ball having completed the circuit through the described wiring has caused the lighting of the "Error" compartment of the score board and charged the magnet coils 158^2 causing the armature-switch 157' to break contact with wire 160 and to make contact with the wire 207. This has the effect of permitting current to flow from the latter through the said armature-switch to the wire 78 lighting the various lamps in bases in exactly the same manner and by the same wiring outlined under the play "Single".

Consider, now, the ball distributor and stealing mechanism, Figures 5 and 6. If a ball 12 has dropped through the opening 26 of the former it passes into the chute 100 and moves down the trough 102 finally resting against the door 148. Having reached this position the ball has closed a circuit through the contact strips 123 and 125, and the strip 127 whereupon lamp 17 in "Strike 1" compartment of the score board is lighted, through the conductor 157 and said strip 127, by wire 158' connected with the lead wire 156 of the named transformer. A second ball 12 dropping into the chute 100 and moving down the trough 102 comes to rest against the ball already in place, and by its weight upon the strips 124, 125' and 127 closes a circuit through the wire 158 lighting lamp 17 in "Strike 2" compartment of the score board 14. A third ball in taking its place in the same way rests upon and depresses member 134 against strip 135 closing a circuit through wires 137 and 159 lighting lamp 17 in "Strike 3" compartment of score board.

With no ball lying in the trough 102, a foul ball received from the hit rack 30 through trough 99 will enter the extension of 121 of the latter passing then into trough 102 and will take up a position against the door 148. In this passage of the ball the gate 133 at the opening 120 is forced open and moved to and against the farther or opposite side of the said trough. The ball now forms an electrical connection at the strip 124, as in the first instance above, lighting lamp 17 in "Strike 1" compartment of the score board. A second foul entering in the same way will rest against the first ball closing an electrical circuit through strips 124, 125 and 127 as before lighting lamp 17. The third foul ball in the portion 121 can only partially enter the trough 102 due to the position now occupied by the gate 133. This ball, therefore cannot close an electrical circuit through any of the contact portion in the trough 102 so that no registry through the lighting of lamps can result, the gate preventing the ball from so doing. It is to be understood that the first ball that entered the trough 102 from the chute 100 in the action first described above would register its "Strike 1" and that a first "foul" ball then entering and occupying the second position would register "Strike 2". However, a second "foul" ball entering the trough can not close an electrical circuit due to the blocking position of the gate 133 with no result shown since that ball will reach no contact portions. If, now, a ball enters the trough 102 from chute 100 it would come to rest against the gate and upon resting upon and depressing the member 134, it will close the circuit through the plate 135 through wires 137 and 159, lighting "Strike 3" compartment of the score board. It will be seen that if two balls enter the trough 102 from chute 100 and occupy the first and second positions at the door 148, the gate 133 if standing open would be pushed back to close the opening 120 completely preventing entry of a ball from the trough 99. That is to say, with the mechanism described, but two foul balls can register as "strikes", providing there are no strikes against the batter from any other source, and but one "foul" ball can register as "strike" provided one strike has been registered against the batter, and no "foul" balls can register as strikes providing two "strikes" are registered against the batter.

A ball passing down through the hole 29 in the ball distributor through the chute 101 and trough 103 will come to rest against the door 148 closing a circuit through the strips 138, 146, and 169' and wire 167 lighting the lamp 17 in "Ball 1" compartment of the score board. The second ball from the same source will rest against the first ball, closing a circuit through strips 139, 146 and 170' or wire 170 lighting lamp 17 in "Ball 2" compartment. A third ball, in turn, will rest upon the strips 140, 146 and 171' closing a circuit If, now, a ball enters the trough 102 from chute partment. A fourth ball will light lamp 17 in "Ball 4" compartment through strips 114, 146 and 172' through wire 172.

A ball 12 in passing down the chute 100 will, if a finger 107 chances to lie in its path, cause said finger to be swung downwardly thus partially rotating the shaft 104 to move the contact portion 111 on the drum 110 toward the contact strip 115' on the hinged members 115. This partial rotation of the shaft will cause one of the fingers 108 of the opposite chute 101 to be brought to a position in which a ball passing down that chute will engage it, again partially rotating the shaft. The contact strip 115' is held in engagement with the drum 110 by the spring 117, the friction between the two being sufficient to prevent said drum being influenced by the weight 119 thereon, and therefore the fingers 107 and 108 will maintain any position in which they may be left by the balls. Eventually the balls will bring together the contact portion 111 and member 115' and at that time a circuit will be closed for lighting lamps at bases and at the score board through conductors as follows: The wire 113 previously described electrically connected to the contact portion 111, leads to switch a^8 in switch base 6^a, a "closed" type of switch, Figures 29 and 30. The other side of that switch is connected directly to the transformer wire 156. Electrically connected to the contact strip 115' is the wire 209 which leads to switch a^9 of switch base 4^a. The other side of the latter switch by a wire 168 leads to lamp 17 in "steal" compartment of the score board. Attached to wire 168 is a conductor 210 leading to switch a^8 in switch base 5^a. The other side of this switch is connected to a

lamp n in base 5 by a wire 211, there being also attached to said wire 211 a wire 212 connected to a lamp q in base 6. A wire 210' connects switch a^9 in switch base 5^a and wire 210, this switch being again of the "closed" type. Connected to the other side of switch a^9 in switch-base 5^a is a wire 213 leading to a lamp o in base 5.

Up to this time all of the switches in switch bases 4^a, 5^a and 6^a have been provided with connections at each side except the switch at a^8 in switch-base 4^a. This switch has no utility and therefore there are no connections thereto, it being shown open and without purpose in Figure 32, and in the diagram of Figure 35.

When contact is made between portion 111 and strip 115' a circuit is completed through the above described wiring, provided a plug-in plate a'' has not been placed in position at switch base 6^a, but a plate a'' at this time has a position at switch-base 4^a. Thus "Steal" compartment of the score board and "Out" compartment of base 5 will both be lighted. Under the same conditions if a plug-in plate a'' is in position at switch base 5^a then "Safe" compartment in base 5 will light, and "Out" compartment in base 6 will light. This means that the stealing mechanism is in operation if no plug-in plate a'' is in position at switch base 6^a. It is also inoperative if no plug-in plate lies at switch-base 4^a. Current up to the time of making the several plays has passed directly through the "closed" type of switch a^9 in switch-base 6^a directly to the stealing apparatus without result when no contact is made at the latter. But when plug-in plate a'' is in place in switch a^9 in switch base 6^a said "closed" switch at that point is opened and the circuit is broken.

Since the stealing mechanism is connected at its other side through the wire 209 to switch a^9 of switch base 4^a; an "open" type switch, it can be readily seen that it is required that a plug-in plate a'' must be in position in said base 4^a to complete the circuit, making the mechanism operative. If a base runner is on first base 4 and the stealing mechanism operates, such runner is out at second base 5. If runners are on both first base 4 and second base 5, then runner is safe at second base 5 and out at third base 6.

"Stealing" happens very infrequently in a ball game and the stealing mechanism herein is so arranged that there is the same infrequency. This is produced by alternate action of balls moving through the chute 100—101 of such mechanism. That is to say two consecutive "Strikes" or two or three consecutive "Balls" would move the mechanism but once from the fact that a first ball entering either the chute 100, 101 would operate the finger therein, carrying it out of the way, leaving a clear path for the following ball without operation by such ball or such action as would affect the circuit closer means at the drum 110.

A ball reaching the hit rack has no effect, of course, upon the stealing mechanism, the latter operating only on "Strikes" and "Balls" as pointed out. Should there be a play in the game where the third "Out" is made by "stealing", and the next ball pitched in the next inning results in a "single" by the batter, it is evident that the insertion of a plug-in plate in switchbase 4^a would immediately make the stealing mechanism operative through the wiring circuit last described and would light the score board and bases, which would be improper. To avoid such a situation, the act of operating the pull-rod 74 will draw the hinged member 115 away from the drum 110 together with the contact member 115' by means of the cord 148^2 attached to the door 148, the latter being raised for the release of balls at the time of an "Out" resulting from some source other than that of "stealing", or when a batter hits safely and is placed on "base". At the time of releasing the drum 110 the weight 119 asserts itself carrying the contact portion 111 away from any chance of making contact with the member 115', or to the position about as shown in Figure 3. If the bases are lighted through the stealing mechanism a plug-in plate a'', representing the runner "Out", when removed from one of the switch bases, breaks the circuit and therefore any lighted lamps will be extinguished, but lighted lamps showing "balls" and "strikes" at the score board will not be disturbed as registered against the man "at bat".

Particular attention is directed to the strike rack. In a ball game a foul ball hit by the batter and not caught by an opposing player is, of course, charged as a strike against the batter, the second foul ball being charged in the same manner providing no previous strikes are charged against the batter in the regular manner. The strike rack is so constructed that any combination of foul-ball strikes and "Strikes" is handled perfectly, resulting in a proper showing at the score board, foul strikes being blocked from registering after two strikes are on the batter and yet the regular third strike will register regardless of the number of fouls hit between the second and third strikes. This result is produced by the first two balls 12 "building up" in the trough 102 as they descend from the chute 100. At the same time they hold the gate 133 closed at the opening 120 thus blocking entrance of balls that might be deposited from the trough 99 and yet permitting registration of a third ball entering from chute 100 by resting upon the contact member 134 and plate 135. Again, if the second ball of the two named balls should enter from the trough 99 the gate 133 will be opened into the trough 102 and held open so that a third ball or subsequent balls entering from trough 99 are prevented fully entering the trough 102. Therefore a circuit can not be closed through the named member 134 and plate 135, and yet a ball that would arrive from chute 100 will come to rest against the gate directly upon the member and plate completing a circuit to show "Strike 3" on the score board.

During the movement of a ball through the runways made up of the members 37, 38 the "field" lamps are lighted only temporarily as compared with the long lighting of the score board lamps 17 and bases. That is to say when a ball reaches and remains at the door 69 the said "score board" lamps 17 or lamps at bases are lighted "permanently" in the sense, only, that they remain lighted until the balls are liberated by lifting said door 69.

In some of the claims I shall use the terms "temporary" and "permanent" or equivalent expressions, for the sake of brevity, their use being understood to be in accordance with the statement just made. Further, in some of the claims I shall refer to the strip 67 and flap 72 on the hit rack 30 as "means", and shall also use the term "means" as referring to a runway, or runways (37, 38), also in the interest of brevity.

While I have referred to electrically lighted lamps throughout the specification it is to be understood that other ways of indicating plays or situations by sensible signals used during the playing of the game may be substituted, since,

lying within the invention and the claims as presented.

The interposition of the armature switch 157' is merely means to the end that a circuit or circuits may be controlled thereby, but other means may be used to obtain the same result.

Further, it may be stated that it is not my intention to be confined to the use of parts specifically described since I may substitute for such parts any other means that will perform the required service.

I claim:—

1. Apparatus in which to play the game of base ball including a designated playing field with its "bases" one of the bases having the legends "Safe" and "Out" in segregated positions, an electric lamp at each legend, each arranged to be separately lighted to show the legend corresponding thereto, two electric switches at another of the bases, electrical connections between each switch and one of the lamps, and means for closing the switches for lighting the lamps.

2. Apparatus in which to play the game of base ball including a designated playing field with its "bases" one of the bases having the legends "Safe" and "Out" in segregated positions, an electric lamp at each legend, each arranged to be separately lighted to show the legend corresponding thereto, two electric switches at another of the bases, electrical connections between each switch and one of the lamps and manually operated means at each switch for lighting one of the lamps.

3. Apparatus on which to play the game of base ball including a represented playing field and its "bases", each base having thereat the legends "Safe" and "Out", an electric lamp at each legend which upon being separately lighted illuminates the legend corresponding thereto, two electric switches at each of certain of the bases, electrical connections between a switch at one base and one of the lamps of another base in advance thereof, and a plug insertable in one of the switches for lighting the lamp corresponding to the legend to be shown.

4. Apparatus on which to play the game of base ball including a represented playing field and its "bases", each base including the legends "Safe" and "Out" electric lamps at each base for separately illuminating the said legends, an electric switch at each of certain of the bases each corresponding to one of the lamps, electrical connections between the switches at one base and the lamps of another base in advance thereof, and a plug insertable in one of the switches for lighting a given lamp.

5. Apparatus on which to play the game of base ball including a represented field and its "bases", each base having thereat means to indicate "Safe" and "Out", a lamp at each, electric switches at certain of the bases, certain of said switches being electrically connected through a source of current with certain of the lamps of other bases, and electrical connections between certain of the switches of a given base and the switches of another base, and plugs adapted for insertion in the switches of any one of the bases.

6. Apparatus on which to play the game of base ball including a series of metallic balls, a main trough for the travel therethrough of the balls, a second trough connected into one side of the said main trough, also for ball travel, a pair of current conducting devices stationed in the main trough, a pair of signaling devices with each of which one of the pair of devices in the trough is separately connected electrically, the opening from the second trough into the main trough lying opposite a position between the two said devices, a gate for closing the said opening of the second trough to the main trough, said gate adapted to swing into and across the passage of the main trough by the weight of a ball against it within the second trough, said gate providing a lodgement for a ball behind it in said main trough, a ball contacting with either of the devices causing the actuation of the signaling device connected therewith.

7. An apparatus for playing the game of base ball including a designated playing field and bases, a signaling device at each of the bases, mechanism for permitting "Base stealing" comprising a contact member forming part of one side of an electric circuit connected with said signal, a rotatable drum, a contact member thereon forming part of the other side of the said circuit, a series of balls used in the game, a chute for guiding the balls and means to rotate the drum by the travel of the balls thereover for advancing the said drum and carrying its contact member step-by-step with respect to the first named contact member.

8. An apparatus for playing the game of base ball including a score board, a signaling device at the same, mechanism for permitting "Base stealing" comprising a contact member forming one side of an electric circuit connected with said signaling device, a movable contact member forming the other side of said circuit, a series of balls used in the game, and means in the path of travel of the balls and affected thereby for advancing the movable contact member step-by-step toward the first named contact member.

9. An apparatus for playing the game of base ball including a designated playing field and its bases, a signaling device at one of the bases, a score board signaling device, balls used in playing the game, mechanism for permitting "Base stealing" comprising a contact member forming one side of an electric circuit connected with the named signaling devices, a movable contact member forming the other side of said circuit to said signaling devices, a series of balls used in the game, and means in the path of travel of the balls affected thereby for advancing the movable contact member step-by-step toward the first named contact member.

10. An apparatus on which to play the game of base ball including two series of lamps, a series of electric circuits for each series of lamps, each separately electrically connected through one of the lamps of its series, and a ball adapted in its travel to selectively and automatically close a circuit through a lamp of one of the series of lamps followed by selectively and automatically closing a circuit through a lamp of the other series of lamps.

11. Apparatus on which to play the game of base ball including a designated playing field, a metallic ball for liberation on the playing field, a rack for receiving the ball from the said playing field, a series of runways on said rack downwardly inclined arranged for the passage of the ball through any one of them, each runway consisting of two conductors insulated from each other, electrically operated signaling devices distributed over said field and corresponding in positions thereon to the different positions a base ball may have on an out door ball field, each runway being connected to one of the signaling devices, an electric circuit being closed through a

signaling device in the travel of the metallic ball down the runway with which that device is connected, a series of score-board signaling devices, a series of pairs of conductors each pair having connection with one of said score-board signaling devices, said pairs of conductors forming two sides of an electric circuit, said ball after leaving a runway for operating a signaling device of the first series of devices adapted to contact with a pair of the last named conductors to operate a score-board signaling device, certain of the signaling devices of each of the two series of devices having the same informative value.

12. The invention according to claim 11 including said rack having an opening for the passage therethrough of a ball.

13. Apparatus on which to play the game of base ball including a support having "bases" indicated thereon in conventional positions, there being a pair of openings in the support, said openings and the "home plate" base of the several bases lying in alignment, a chute beneath the support terminating at its extremities at said openings adapted to cause a ball dropped through one of the openings to be discharged through the other opening toward said "home plate", and a plurality of pairs of partitions on the support, each pair creating a pocket, the pockets being separate one from the other and any one of them adapted to receive the ball from said chute, there being an opening in each pocket for the reception of a ball.

14. Apparatus on which to play the game of base ball including an indicated base ball playing field with its "bases" and a series of signals in distributed positions on such field, each indicating a batted ball position, a series of signals each denoting a score board legend, pairs of conductors for an electric current, the same forming runways, each pair being connected with one of the signals of the first named series of signals, a ball for traversing the conductors of a pair and for connecting them electrically for operating the signal with which that pair is connected, and a pair of conductors connected with each of the signals of the second named series of signals, any of the said second named series being operated by a ball effecting the closing of a circuit through the conductors connected therewith.

15. Apparatus on which to play the game of base ball including an indicated base ball field, its "bases", and a score board, a series of signals in distributed positions on said field, each denoting a batted ball position, a series of signals at the score board, a pair of conductors connected to each of the signals of the first named series, a ball to travel upon the conductors of a pair closing an electric circuit through such conductors for operating the signal connected therewith, a pair of conductors connected to each of the signals of the second named series, said ball effecting the closing of a circuit through any one pair, and a plurality of means in the path of travel of a ball for directing it to different positions in its movement toward pairs of conductors of either series of signals.

16. Apparatus on which to play the game of base ball including "bases" indicated on a base ball playing field, a series of "batted ball" signals distributed over the field, each indicating a batted ball position, a pair of conductors connected to each of the signals, a metallic ball adapted to connect any one of the pairs of conductors electrically by contact therewith to operate a signal, a signal at a "base" denoting "Safe", a signal at a base denoting "Out", and a pair of conductors connected to each of the last named signals, the ball closing a circuit through either pair of conductors to operate a signal with which a pair may be connected.

17. Apparatus on which to play the game of base ball including a designated playing field and its "bases", a metallic ball, a series of signals distributed over the field, each indicating a batted ball position, a series of signals each denoting "Safe" and "Out", a pair of conductors connected to each of the signals of the first named series of signals, the same being connected electrically by contact of the ball therewith to show the signal to which said conductors are connected, a pair of conductors connected to each of the signals of the second named series of signals, the same being connected electrically by the ball contacting therewith to close a circuit therethrough and show the signal with which said conductors are connected, the closing of the circuit through the last named signal following and replacing a disclosed signal of the first series of signals, and means in the path of the ball for imparting an erratic travel thereto prior to reaching the named conductors.

18. An apparatus for playing the game of base ball including a playing field having playing positions denoted thereon, a series of lamps distributed over said field in positions corresponding to certain playing positions, a series of separate runways each consisting of a pair of conductors connected to a lamp of the series, a metallic ball for release by a player adapted to traverse a runway to electrically connect its conductors and light a lamp corresponding to that runway during the travel of the ball therealong, said lamp when lighted indicating a given position of a base ball on the said field, a series of other signaling lamps, pairs of conductors, each pair having connection with one of the last named lamps, said ball electrically connecting the conductors for lighting the lamp connected therewith, the ball in its travel leaving the named runways before reaching the last named conductors whereby the lamp of the first series of lamps is automatically extinguished followed by the lighting of a lamp of the second series, the runways and the conductors of the said second series of lamps being spaced apart in the line of travel of the ball.

19. An apparatus on which to play the game of base ball including a designated playing field, a series of lamps distributed over said field denoting various playing positions, a current-conducting ball, a series of inclined runways consisting each of a pair of conductors, each pair having connection with one of the lamps, and upon which the ball is directed and mounted for closing an electric circuit through a lamp, a second series of lamps severally denoting "Strikes", "Balls" and other designations as on a score board, a pair of conductors connected with each lamp of said second series of lamps and spaced in the direction of the path of travel of the ball from the named runways, contact of a ball with a pair of conductors closing a circuit through a lamp after leaving a runway, and means for imparting an erratic path of travel to the ball in its movement toward the runways.

20. An apparatus on which to play the game of base ball including the representation of a playing field, a series of lamps distributed over said field, a current conducting ball, a series of pairs of substantially parallel conductors, each pair of conductors forming a runway for the ball and each pair connected to a lamp, said ball dur-

ing its travel in the runway closing a circuit through the lamp, a score board, a second series of lamps severally denoting plays at said score board, a pair of conductors connected to each of the lamps of said second series, said ball adapted to close a circuit through the lamp of a given pair, means for diverting the ball during its travel toward the runways whereby any one thereof will receive said ball, and means located between the runways and the conductors for lighting the lamps of the score board for again diverting the ball.

21. Apparatus on which to play the game of base ball including a designated playing field, a series of individual lamps indicating plays on said field, a second series of lamps indicating various plays as on a score board, pairs of conductors, each pair being separately connected to a lamp of the first named series of lamps, other pairs of conductors, each pair having separate connection with a lamp of the second named series of lamps, a current conducting ball adapted to traverse a pair of conductors of the first series of lamps for closing a circuit through the lamp of that pair, said ball passing off the latter and then having contact with the pair of conductors of a lamp of said second named series of lamps and holding that circuit closed, means by which to direct the ball at random before reaching any of the first named conductors, and means for directing said ball at random toward the second named conductors.

22. Apparatus on which to play the game of base ball including a designated playing field, a series of signaling devices distributed over said field in positions to indicate certain positions of a base ball on the field, each of said devices being capable of producing a signal sensible to a player of the game, a second series of like devices each indicating a play as on a score board, a current-conducting ball for release by a player, a separate runway of considerable length comprising two spaced conductors connected to each of certain of the first named devices, the ball adapted to travel along and upon said conductors of a runway for closing a circuit through the device connected therewith, a pair of conductors connected to each of the devices of the named second series of devices, and a normally open circuit closer lying in position at each of the pairs of the last named conductors adapted to contact with both of the same, any one of the several circuit closers lying in position to receive a ball against it after said ball leaves a runway.

23. The invention according to claim 22 and wherein certain of the devices of one series of devices correspond in signaling information on the playing field with certain of those of the other series of devices at the score board.

24. Apparatus on which to play the game of base ball including a designated playing field a series of signaling devices distributed over said field, each to indicate the position of a base ball on the field corresponding to the same position on an out door field, a pair of conductors connected to each signaling device, a current conducting ball for delivery by a player to traverse a pair of such conductors for closing a circuit through the signaling device with which such pair is connected, a series of score board signaling devices indicating "Strikes" and "Balls", a pair of conductors connected to each of said score board signaling devices, said ball adapted to contact with and close a circuit through the same, a plurality of means in the path of a delivered ball, one of which may receive and direct said ball toward any one pair of conductors of the first named series of signaling devices, and one of which may receive and direct the ball to a pair of conductors of the series of score board signaling devices.

25. Apparatus on which to play the game of base ball including a designated base ball playing field, a series of signaling devices distributed over said field, each to indicate the position of a base ball on said field corresponding to the same position on an out door field, a pair of conductors connected to each signaling device, current conducting balls for delivery by a player to traverse pairs of such conductors closing circuits through the signaling devices with which they are connected, a series of score board signaling devices for indicating "Strikes" and "Balls", a pair of conductors connected to each of said devices, said balls adapted to close circuits through pairs of conductors for operating such devices with which they are connected, a plurality of means in the path of a delivered ball one of which may receive said ball and direct it toward any one pair of conductors of the first named series of signaling devices, and one of which may receive and direct the ball from its path toward said conductors and divert it to a pair of conductors leading to the score board signaling devices, a pair of inclined troughs for receiving balls thus lastly directed, pairs of certain of the conductors leading to the score board signaling devices terminating in each trough, the terminals of pairs lying in spaced relation to each other, each trough being constructed to confine a series of balls in a single line therein and having a place of lodgement for said series, and said place of lodgement being positioned to locate a ball of a series upon the terminals of a pair of the conductors.

26. Apparatus on which the play the game of base ball including a designated base ball playing field, a series of signaling devices distributed over said field, each to indicate the position of a base ball on said field corresponding to the same position on an out door field, a pair of conductors connected to each signaling device, current conducting balls for delivery by a player to traverse pairs of such conductors for closing circuits through the signaling devices with which they are connected, a series of score board signaling devices for indicating "Strikes" and "Balls", a pair of conductors connected to each of said devices, said balls adapted to close circuits through pairs of conductors for operating such devices with which they are connected, a plurality of means in the path of a delivered ball one of which may receive said ball and direct it toward any one pair of conductors of the first named series of signaling devices, and one of which may receive and direct the ball from its path toward said conductors and divert it to a pair of conductors leading to the score board signaling devices, a trough for receiving balls thus lastly directed, pairs of the conductors for the last named devices terminating in said trough, the terminals of pairs lying in spaced relation to each other, said trough being constructed to confine a series of balls in a single line therein and having a place of lodgment for said series and positioned to locate a ball of the series upon the terminals of each pair of said conductors, there being an opening in the trough at one side thereof at a position between two of the spaced conductor terminals and a freely hinged gate adapted to overlie said opening and positioned to receive a ball against it that may lie in said trough or that may enter through said opening.

27. Apparatus on which to play the game of base ball including a support on which bases of a base ball playing field are represented, said bases having the legends "Safe" and "Out", an electric lamp at each legend to illuminate the same, a score board having score board legends indicated thereon, an electric lamp for illuminating each legend, a pair of conductors connected to each lamp of each series of lamps, a current conducting ball to traverse a pair of conductors of a lamp of the first series of lamps for closing a circuit therethrough, a pocket for receiving the ball, the terminals of one of the pairs of conductors of the score board lamps being stationed in said pocket and electrically connected by a ball lying in the latter, a switch mounted on said support at a base on said field, wiring connected between the switch and a score board lamp, a lamp on the field and a lamp at the score board both being lighted by the entrance of the ball into the pocket.

28. Apparatus on which to play the game of base ball including a signal indicating "Ball", a signal indicating "Strike", lamps for showing one or the other of the same, a pair of troughs, each trough corresponding to one of the signals, a pair of conductors connected with each lamp, and each terminating at one of their ends in one of the troughs, a current conducting ball for closing a circuit through either lamp in its travel through a trough by contacting with the conductor terminals therein, and means to receive and to selectively and automatically direct the ball into either trough against either of the pair of conductor terminals therein.

29. Apparatus on which to play the game of base ball including signals indicating "Balls", signals indicating "Strikes", a series of lamps each for showing one of the signals of either series of such signals, a pair of conductors connected with each lamp, released current conducting balls for closing circuits through the lamps of either series of such lamps by contacting with the other terminals of the conductors, means to initially receive the released balls, a pair of tubes separately extending from said means, either of said tubes adapted to receive said balls and to direct the same to and upon the said pairs of conductors, and means to terminate the travel of the balls and retain each upon one of the said pair of terminals of the latter.

30. Apparatus on which to play the game of base ball including a series of signals severally denoting on a score board the number of "Pitched" balls in the game, a series of signals severally denoting the number of "Strikes", a series of lamps corresponding each to one of the signals of each series, the lighting of any one lamp illuminating the signal corresponding thereto, a pair of conductors electrically connected to each of the lamps, a pair of inclined guide troughs within each of which the terminals of certain of the pairs of conductors are disposed, the pairs of terminals of said pairs of conductors in one trough being equal to the number of "Balls" to be shown, the pairs of terminals of the other pairs of conductors within the other trough corresponding in number to the "Strikes" to be shown, said pairs of terminals in each trough being spaced from each other, current conducting balls for release in playing game, said balls adapted to contact with the several terminals to close circuits through the lamps connected therewith, and a part at the troughs providing lodgement for the balls to station them upon said terminals.

31. Apparatus on which to play the game of base ball including a designated playing field, current conducting balls for release by a player, a series of lamps distributed over said field, a series of runways each for receiving a ball, each said runway consisting of a pair of conductors connected with a lamp of said series of lamps through which a circuit is closed by a ball, pockets for receiving balls after the same have left a runway, a pair of conductors terminating in each pocket, lamps connected with the terminals, such terminals being connected by a ball lodged in said pocket for lighting a lamp, a score board for showing "Balls" and "Strikes" lamps for separately indicating the number of such "Balls" and "Strikes" resulting from plays, a pair of troughs, pair of conductors having terminals located in each trough, each pair connected to a lamp of the last named series, said pairs of terminals each adapted to receive contact of a ball to light a lamp connected with such terminals, a plurality of pockets at the playing field any one of which may receive a ball, a tube leading from one of the pockets for delivering balls toward the runways, and a tube leading from each of two oher pockets, each tube directing a ball into one of the named troughs.

32. An apparatus on which to play the game of base ball including in its construction two series of lamps to be lighted electrically, a pair of conductors connected to a lamp of each series, current conducting balls any one of which is adapted to close a circuit through one lamp by contact with the conductors of that lamp, the pairs of conductors of the two series lying in spaced relation in the line of travel of a ball whereby the ball contacts with and leaves a pair of conductors of one series before reaching and contacting with a pair of conductors of the other series.

33. Apparatus on which to play the game of base ball including in its construction a trough, a series of metallic balls to enter said trough, said trough having therein a place of lodgement for a ball, a series of lamps to be electrically lighted, a series of pairs of conductors having terminals within the trough in pairs, the several pairs of terminals being spaced apart in line with the path of travel of the balls in said trough, a second trough connected into the first named trough between the positions of two pairs of the terminals, and a gate hinged in position to block the passageway of one trough by weight of a ball thereagainst moving through the other trough.

34. Apparatus on which to play the game of base ball including in its construction a support having the representation of a playing field including "bases", electrically lighted lamps at each base, each upon being lighted disclosing information to a player, a switch-base mounted in the support adjacent each of certain of the "bases", each switch-base having spaced contact strips, conductors connecting certain of the contact strips of one "base" with a lamp of another "base", conductors also connecting certain of the contact strips at one "base" with a contact strip of a switch-base at another "base", and a plug for insertion between the contact strips of a switch-base at one "base" for closing a circuit through a lamp at another "base".

35. Apparatus on which to play the game of base ball including in its construction a support

having a represented playing field with its "bases", an electrically lighted lamp at each base, a score board and lamps thereat, said lamps and the lamps at bases when lighted disc closing information to a player, a switch-base mounted in the support adjacent each of certain of the bases, each switch-base having spaced contact strips, conductors connecting certain of the contact strips at one base with a lamp of another base, conductors connecting certain of the contact strips at one base with contact strips of another base, certain of the contact strips being connected also with the score board lamps, and plugs adapted for insertion between the contact strips of a switch-base at one base, one of said plugs closing a circuit through the lamp at another base and one of them closing a circuit through a score board lamp.

36. Apparatus on which to play the game of base ball including in its construction a support having base ball "bases" represented thereon, a lamp at one of the bases to be electrically lighted, a pair of conductors, a metallic ball to effect the closing of a circuit through them by contact therewith, a pair of contact strips mounted in the named support adjacent one of the bases, one of the named conductors being connected with one of them, a lamp at one of the bases, a conductor connected with the other of the pair of contact strips and also connected with said lamp, said lamp lying at a different base from that adjacent the contact strips, and a current conducting member insertable between the strips to close a circuit through said lamp.

37. Apparatus on which to play the game of base ball including a support having base ball "bases" represented thereon, a score board, an electrically lighted lamp at one of the bases, and a lamp at the score board, each for indicating the result of a play in the game, a pair of conductors one of which has connection with both lamps, a metallic ball for liberation by a player, adapted to electrically connect the conductors by contact therewith to light the lamp, a pair of contact strips at one of the bases, a conductor connected to one of the contact strips and with one of the named conductors, a lamp at another of the bases, a conductor connected between the last named lamp and the other of the pair of contact strips, and a current conducting plug insertable between the strips to connect the same electrically.

38. Apparatus for use in playing the game of base ball including in its construction a pair of spaced chutes, a rotatable shaft journaled at said chutes, a finger extending from diametrically opposite sides of the shaft at each chute and extending into the same adapted to pass into and out of the chutes in the rotation of said shaft, the fingers at one chute lying at right angles to those at the other chute, balls for delivery into either chute adapted in their passage therethrough to strike a finger to impart rotation to the shaft, the passage of a ball through one chute and the striking of a finger therein causing a finger in the other chute to take a position to be struck by a ball, an electrical contact portion rotatable with the shaft, and a contact strip normally in position to be met by said portion in the rotation of the shaft, the contact portion and said strip having electrical connection with a member to be operated and forming parts of an electrical circuit through said member.

39. Apparatus for use in playing the game of base ball including in its construction a pair of pockets, balls for release by a player, the same adapted to enter either of said pockets, an inclined tray-like structure, a tube for receiving a ball from one of the pockets and having a delivery end terminating above said structure, an inclined trough below the position of the structure, a tube for receiving a ball from the other of the pockets and delivering it to said trough at its raised end, a second trough below the said tray-like structure inclined downwardly toward and opening into the first named trough, and there being an outlet for a ball in the lower end of the named structure, the upper end of the said second trough lying in position to receive a ball from said outlet.

40. Apparatus for use in playing the game of base ball including in its construction a pair of pockets, balls for release by a player, the same adapted to enter either of said pockets, an inclined tray-like structure, a door closing its lower end, a tube for receiving a ball from one of the pockets and having a delivery end terminating above said structure, an inclined trough below the position of the structure, a door closing its lower end, a tube for receiving a ball from the other pocket of the pair and delivering it to said trough at its upper end, a second trough below the said tray-like structure inclined downwardly toward and opening at its lower end into the first named trough, there being an outlet for a ball in the lower end of the named tray-like structure, the upper end of the said second trough lying in position to receive the ball from said outlet, and a pull cord attached to each of the named doors for releasing the balls.

41. In a game apparatus including a represented playing field, the combination of a signaling lamp on said field designating a given position of play, a runway including two spaced conductors as parts of an electric circuit, each conductor being connected with the lamp, a current conducting ball to traverse said runway closing a circuit through said lamp, a second lamp for denoting a given occurrence in playing the game, and a pair of conductors having spaced terminals spaced from the delivery end of the runway and connected with the last named lamp, a current conducting member free to be moved and adapted to receive the ball against it after leaving the runway, said member closing a circuit through said second lamp, the lamps being lighted separately and automatically by said ball.

42. Apparatus with which to play the game of base ball including a series of lamps each for denoting a given play in the game, a separate pair of conductors connected with each of the lamps, a trough in which the pair of terminals of each of the pairs of conductors is stationed, the pairs lying in spaced relation substantially in line with each other, separately released current conducting balls guided in and moving through the trough, and a stop in said trough for lodgement thereagainst of the series of balls, said stop and the pairs of terminals being disposed in such positions relatively that each ball comes to rest upon a pair of said terminals.

ROY J. RHODES.