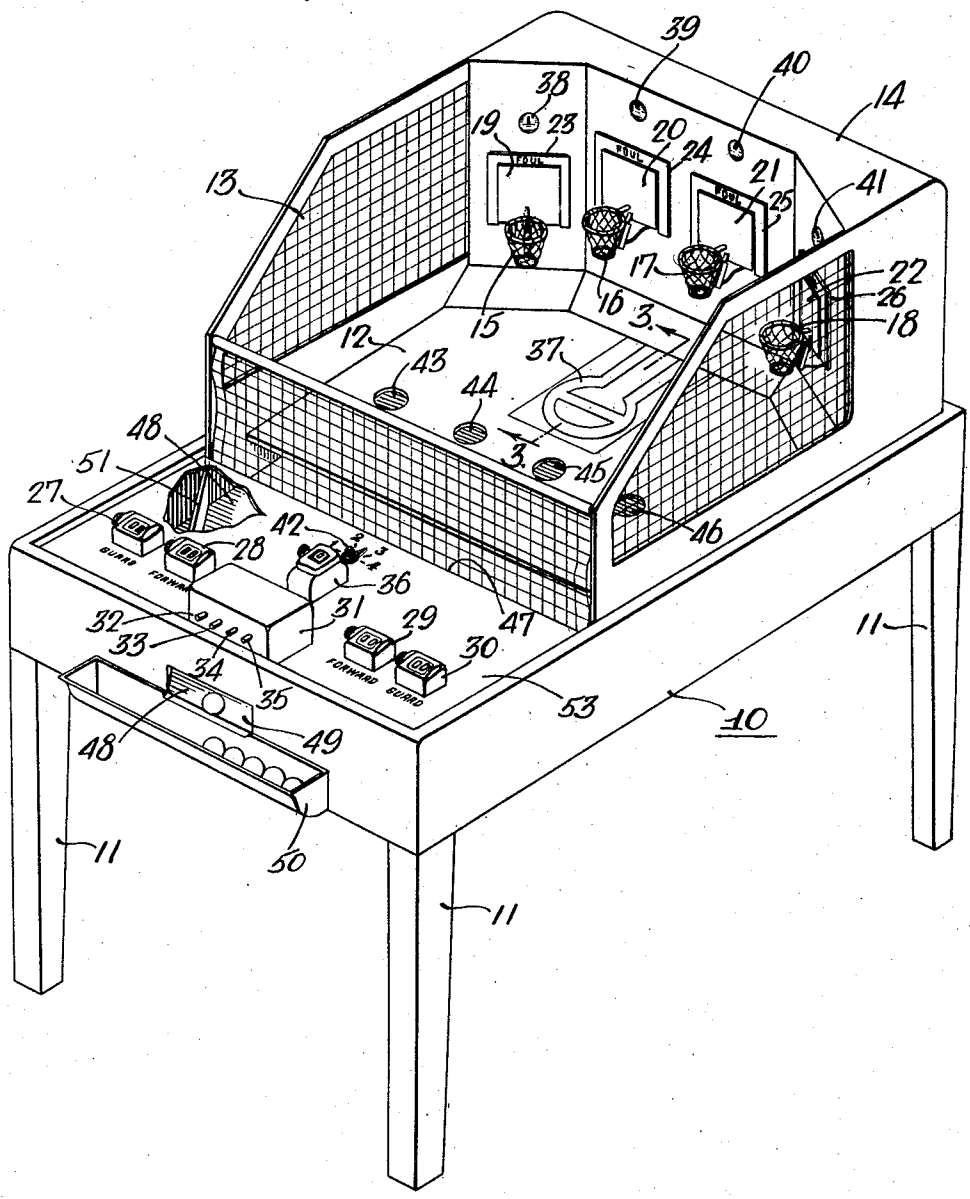
July 7, 1959 F. E. TARTE, JR 2,893,734

GAME APPARATUS

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FIG. 1.



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FIG. 2.

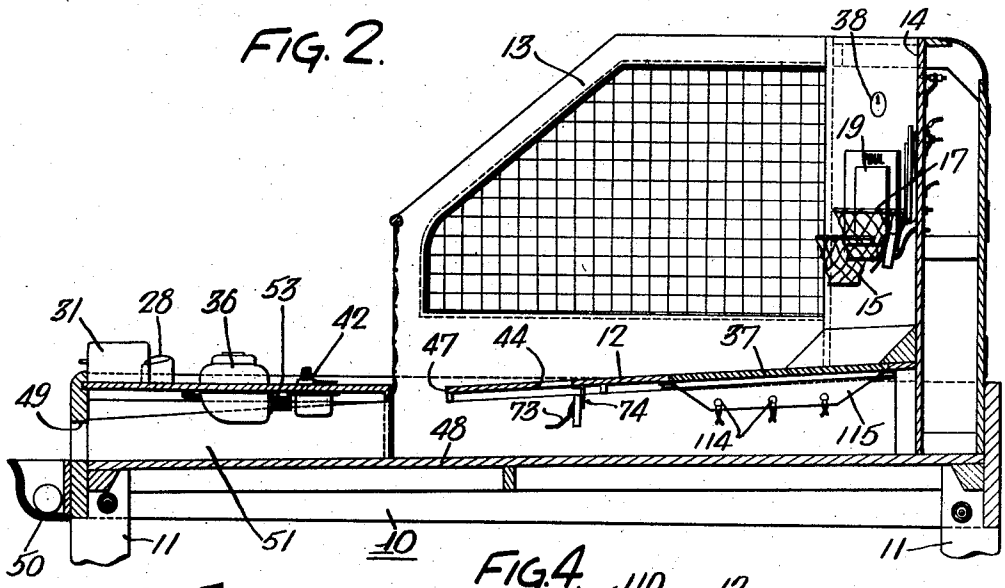


FIG. 4.

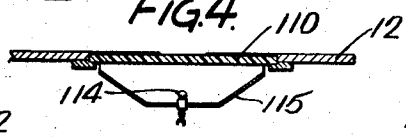


FIG. 5.

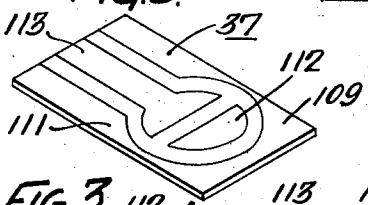


FIG. 3.

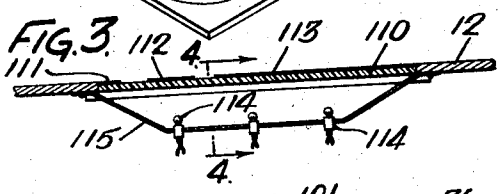


FIG. 6.

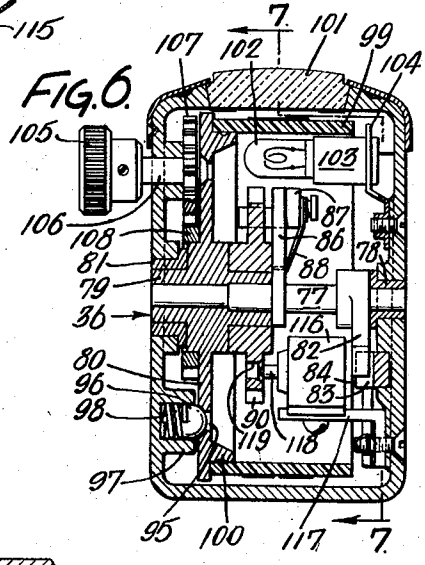
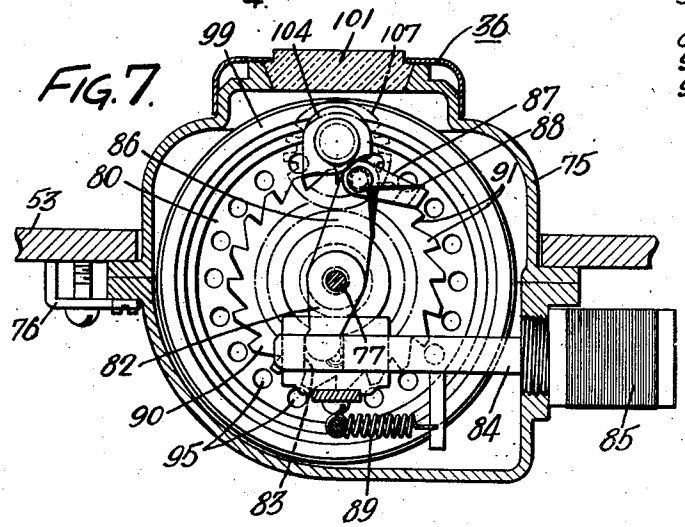


FIG. 7.



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FIG. 8.

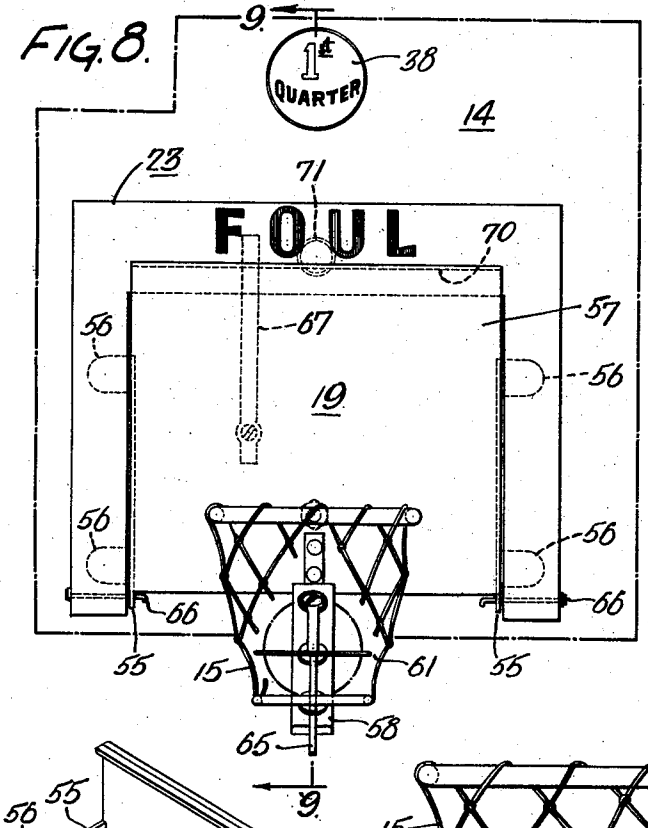


FIG. 9.

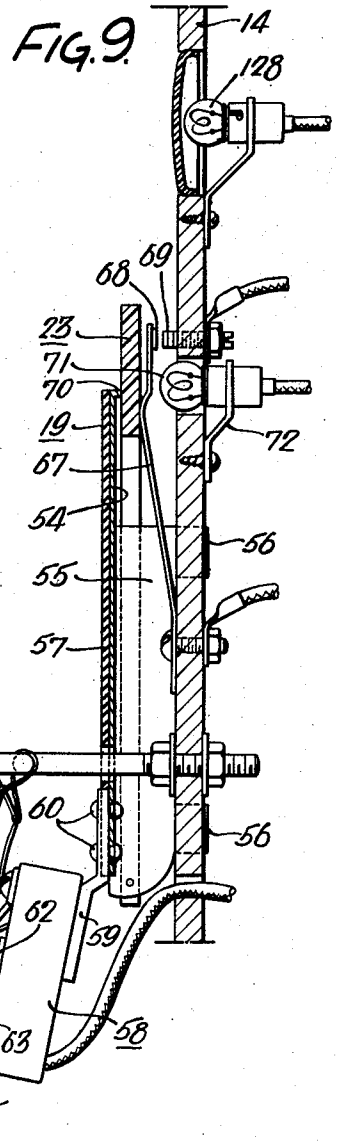
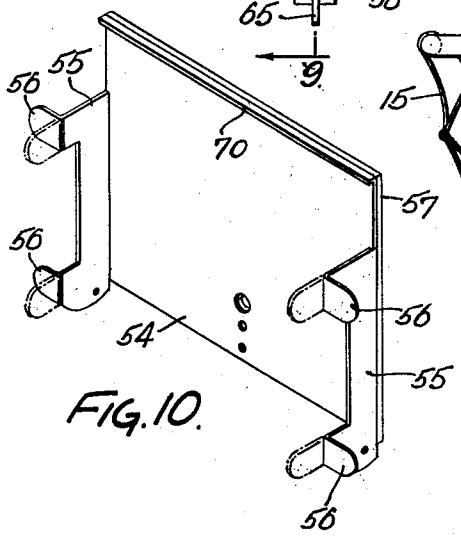


FIG. 10.



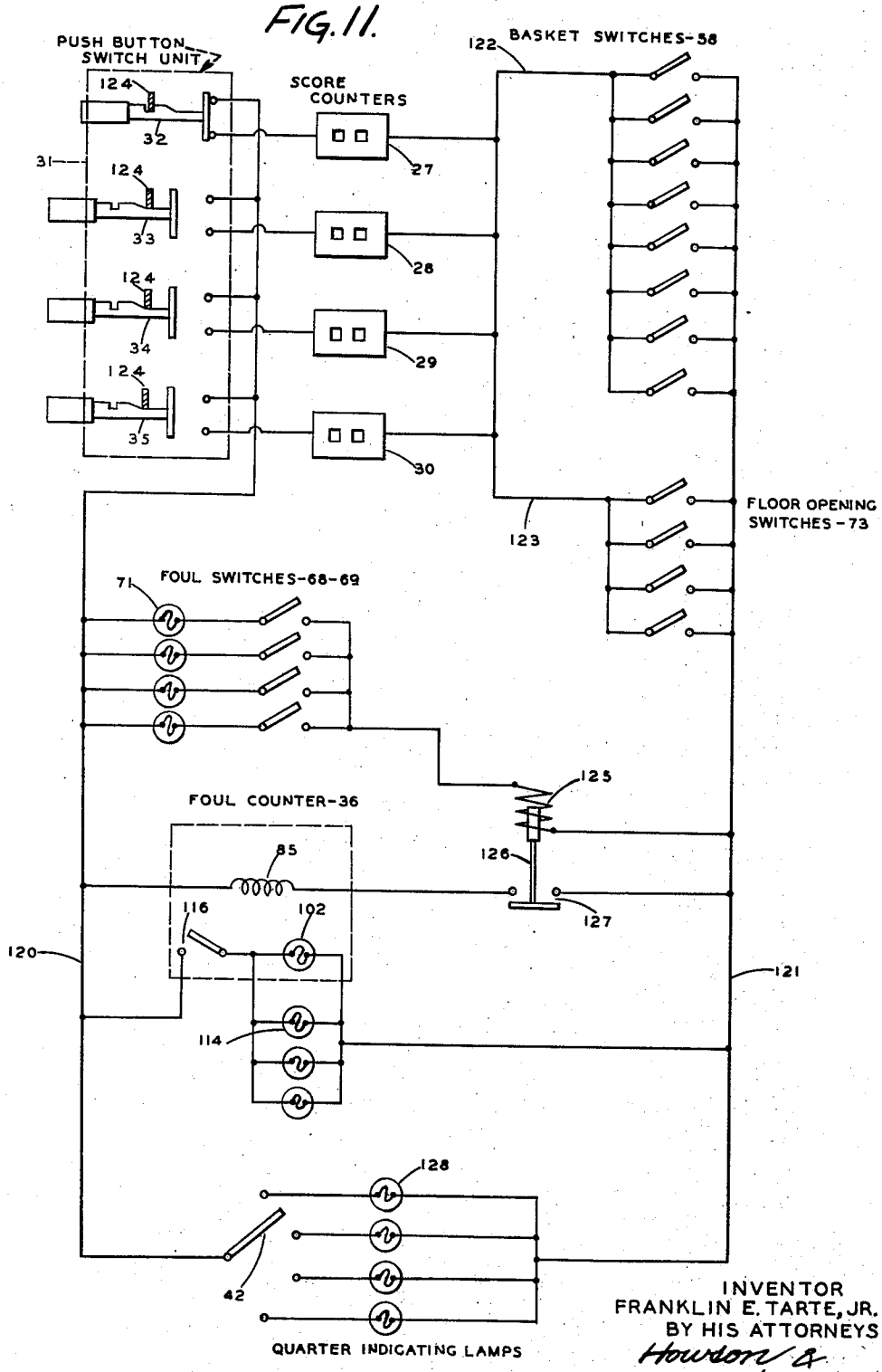
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FIG. 11.



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2,893,734

GAME APPARATUS

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Application July 31, 1953, Serial No. 371,545

5 Claims. (Cl. 273—85)

This invention relates to games or amusement devices of the type which are generally characterized in that each player strives to make scoring plays, each of which has a certain value. More particularly, the invention relates to a game device simulating the game of basketball.

One object of the present invention is to provide a game device which affords sport, recreation and amusement for persons of all ages desirous of developing or exercising their skill in throwing balls in an accurate manner at fixed targets or receptacles and having the results of their throws register automatically before them.

Another object of the invention is to provide a game of this character which is well adapted for use in public places in the same way that the games of darts and shuffleboard are commonly used. If desired, the device may be adapted for coin operation.

A further object of the invention is to provide a novel game apparatus wherein a plurality of electric switches are individually operable by scoring plays made by the players, the score of each player or team being automatically totalized by a counter assigned to that player or team.

A further object of the invention is to provide a novel game apparatus which simulates the game of basketball in that each player tosses a ball toward a basket, each basket having an associated means whereby each ball that passes through the basket will cause a score to be registered and totalized on a particular counter assigned to the player.

A further object of the invention is to provide a novel basketball game apparatus wherein each basket receptacle unit is provided with a means for registering fouls or inaccurate tosses, such fouls being registered and totalized on a foul register or counter.

Other objects and features of the invention will be apparent from the detailed description with reference to the accompanying drawings, in which

Fig. 1 is a perspective view of a game apparatus according to the present invention;

Fig. 2 is a longitudinal sectional view of the same;

Fig. 3 is a sectional view taken on line 3—3 of Fig. 1;

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3;

Fig. 5 is a perspective view of the foul marker insert;

Fig. 6 is a cross-sectional view taken through the foul counter;

Fig. 7 is a sectional view taken on line 7—7 of Fig. 6;

Fig. 8 is a front view of one of the target units;

Fig. 9 is a sectional view taken on line 9—9 of Fig. 8;

Fig. 10 is a perspective view of the backboard mounting plate for one of the target units; and

Fig. 11 is a diagrammatic illustration of the electrical circuits employed in the apparatus.

Referring first to Figs. 1 and 2, the game apparatus as shown comprises a table **10** which is preferably of rectangular form and which has supporting legs **11**. Spaced rearwardly from the front end of the table is a forwardly declined floor **12** which simulates a basket ball playing floor and which is preferably surrounded by an enclosure

designated generally by reference numeral **13** to retain balls thereon in the course of the playing of the game. At the rear of the enclosure is a basket supporting structure **14** having at least one, and preferably several, baskets mounted thereon, in the present instance there being four baskets designated **15** to **18**. Associated with the baskets are stationary backboards **19** to **22**, and associated with the backboards are foul members **23** to **26** which serve a purpose to be described later.

At the front or playing end of the table **10** there are provided a plurality of score counters **27** to **30**. Although four counters are shown, any desired number may be provided. These counters serve to totalize the scores of the respective players or teams, as hereinafter described. At the front end of the table is a selector switch unit **31** having push-button selector switches **32** to **35** corresponding to the score counters and by means of which the score counters are rendered operative selectively, as hereinafter described.

A foul counter **36** is also provided at the forward portion of the table **10**, and the purpose of this counter is to count and totalize foul throws made by each player or team when thrown balls strike the foul member associated with the basket at which the player or team is shooting. In connection with the foul counting feature of the apparatus, there is also preferably provided a simulated foul shot zone marking **37**, and provision is made for causing the marking **37** to be illuminated whenever a foul count appears on the counter **36**, and to remain illuminated as long as any foul count appears on the counter.

With four baskets employed, as shown in the illustrated embodiment, each basket may represent a playing quarter of a basket ball game, and each player or team may have a certain number of shots at each basket representing the play during a particular quarter of the game. The baskets may be numbered as indicated, and the quarter in the process of being played may be indicated by selective illumination of indicating windows **38** to **41**. For this purpose, a four position selector switch **42** is provided on the forward portion of the table to selectively energize lamps associated with the indicating windows **38** to **41**.

A further optional feature of the apparatus resides in the provision of a number of openings in the simulated playing floor **12** through which the balls may roll, and with each throw through a basket representing a score of two points corresponding to a field goal in basket ball, the passage of a ball through one of the floor apertures may represent a score of one point. As described hereinafter, provision is made for using the score counters **27** to **30** to score these single point scores. In the illustrated embodiment, there are four floor openings **43** to **46** and the scoring arrangement is such that a ball passing through any of the floor openings will actuate the counter that is in use at the time. This additional feature adds an element of chance to the game, as it will be apparent that the passage of a ball through a floor opening is a matter of chance. In further simulation of the game of basket ball, the passage of a ball through one of the floor openings may be regarded as representing commission of a foul by the other player or team, and the floor openings may be labeled to represent different fouls such as holding, pushing, tripping, etc.

Fig. 2 shows the construction of the table for return of thrown balls to the front end of the table. A ball rolling down the slightly declined floor **12** may roll all the way to the front edge of the floor and drop through the space **47** onto the slightly declined baseboard **48**, and then roll forwardly through the slot opening **49** into a collecting trough **50** at the front of the table. Convergent guides, one of which is shown at **51** in Fig. 1, may serve to guide balls toward the opening **49**. Should a ball

drop through one of the floor openings 43 to 46, it will fall onto the declined baseboard 48 and roll forwardly to the collecting trough. It will be seen that in the illustrated embodiment the mounting panel 53 for the various devices at the forward portion of the table also serves as the top of the return passage for the balls.

Referring now to Figs. 8 to 10, each of the baskets may be mounted directly on the support 14, and each backboard may comprise a metal plate 54 (see Fig. 10) having side flanges 55 and tabs 56 which extend through slots in the support 14 and are bent behind the support to hold the plate 54 rigidly thereon. A resilient facing 57 of rubber or like material may be cemented to the metal plate 54. Associated with each basket is a switch unit 58 mounted on a bracket 59 which is secured to plate 54 as by means of rivets 60. The switch unit 58 carries a rigid ring 61 through which a ball may pass. The switch unit comprises two micro-switches 62 and 63 having associated spring arms 64 and 65 which are engaged successively by the ball to momentarily close the switches 62 and 63 in succession.

The foul member associated with each backboard preferably is in the form of an inverted U so as to border the backboard at the top and sides thereof. Thus, in Figs. 8 and 9 the foul member 23 borders the top and sides of the backboard 19. The foul member is pivotally mounted at the lower ends of its sides on pins 66 which extend through side flanges 55 of the metal plate 54. The foul member is preferably formed of translucent material such as a plastic material, and it is urged forwardly by a spring arm 67 which forms part of a switch including a contact 68 on the upper end of arm 67, and a stationary contact 69 mounted on support 14. The upper edge of plate 54 is turned as at 70 to serve as a stop for the foul member. A ball striking the foul member causes it to move backward against the action of spring arm 67, thereby momentarily closing contacts 68 and 69 to effect operation of the foul counter as hereinafter described. Preferably, a lamp 71 is mounted on support 14 by means of a supporting bracket 72, and is energized by closure of contacts 68 and 69 to momentarily illuminate the translucent foul member 23 which may have the word "foul" thereon, as shown in Fig. 8. While each foul member is preferably pivotally mounted as illustrated and described, any arrangement may be employed whereby the striking of the foul member by a ball will effect the desired operation.

As previously mentioned, each of the respective score counters 27 to 30, when in operation, is actuated in response to a ball passing through the basket in play or any floor opening. Moreover, the counter is actuated twice by reason of the two switches associated with each basket. Thus, assuming that counter 27 is in operation, and that balls are being thrown at basket 15, a ball passing through this basket, as shown in Figs. 8 and 9, will actuate the counter twice by successive operation of the switches 62 and 63. As also mentioned previously, the counter will be operated once by a ball passing through any floor opening. As shown in Fig. 2, each floor opening has associated with it a switch 73 mounted on a bracket 74 secured to the floor 12. Momentary closure of the switch 73 effects a single operation of the operative counter.

The score counters 27 to 30 may be simple resettable counters of electromagnet type. Thus, each counter may comprise an electromagnetically-operable ratchet mechanism operable against the action of a spring tending to return the ratchet to zero or home position, and a holding pawl to prevent return of the ratchet until manual release of the holding pawl. The present invention is not concerned with the specific construction of the score counters, and further description thereof is unnecessary.

The foul counter 36 may take the form shown in Figs. 6 and 7, which has provision for closing an indicating lamp circuit, as hereinafter described, as long as the counter dial is out of the home or zero position, i.e. as long as there is a foul score on the counter. Referring to Figs. 6 and 7, in the form shown the foul counter comprises a casing 75 disposed in an opening in panel 53 and secured thereto as by means of a plurality of brackets, one of which appears at 76. Within the casing 75 is a rotatable shaft 77 having one end journaled in bearing 78 and having its other end supported in the hub portion 79 of a rotatable plate 80, the hub portion 79 being journaled in bearing 81. Shaft 77 is rotated through an actuating arm 82 which is fixed to the shaft and which extends into a recess 83 of an armature 84 actuated by solenoid 85. Also fixed to shaft 77 is an arm 86 which pivotally carries a pawl 87 which is biased by spring 88. The shaft 77 is oscillated back and forth by repeated energization of solenoid 85 whose armature is biased by spring 89, and the consequent movement of pawl 87 steps ratchet 90 which is fixed to plate 80. Plate 80 is provided with apertures 95 corresponding in number to the number of ratchet teeth 91, and the plate is indexed in each position to which it is moved by the ratchet by means of a detent ball 96 seated in a cup portion 97 provided on casing 75 and biased by spring 98 into engagement with plate 80. A translucent drum dial 99 is carried by plate 80, being secured to an annular flange 100 on said plate, and the dial is provided with numbers representing the foul count. A window 101 is provided in the casing 75, through which the foul count is visible. Preferably, a lamp 102 is provided in association with the window 101 to illuminate the translucent dial, the lamp socket 103 being mounted on a bracket 104 secured to the casing. The counter is resettable to the zero or home position by means of a manually operable knob 105 which is connected through a short rotatable shaft 106 to a bear 107 that meshes with a gear 108 on plate 80. By rotating knob 105 so as to rotate plate 80 in the same direction as it is moved by the pawl and ratchet, the dial is moved to zero position.

As previously mentioned, it is desired that the foul marker 37 (Fig. 1) shall be illuminated whenever there is any count on the foul counter. The marker 37 may comprise an insert 109, as shown in Fig. 5, to be mounted in an opening in the floor 12, and the insert may comprise a translucent member 110 and opaque members 111, 112 and 113, defining the foul marker 37. One or more lamps 114 may be provided in an opaque housing 115 below the foul marker to illuminate the latter.

Provision is made within the foul counter 36 (Figs. 6 and 7) for effecting energization of lamps 114 and, preferably, also lamp 102, whenever the dial of the counter is moved from zero or home position. A micro-switch 116 is mounted within casing 75 on a supporting bracket 117. This switch is spring-biased to the open position, and its actuating element 118 is disposed for engagement by the ratchet 90. An aperture 119 is provided in ratchet 90 in a position such as when the ratchet is in the home position the aperture 119 is aligned with element 118 and switch 116 is permitted to open. However, when the ratchet 90 moves away from the home position it actuates element 118 to close switch 116. The switch is connected in circuit with lamps 102 and 114 so as to energize the lamps whenever it is closed.

Referring now to Fig. 11, the electrical supply conductors for the electrical system are shown at 120 and 121, it being understood that these conductors are connected to a suitable source of electrical supply. The score counters 27 to 30 are connected to the basket switches through connection 122 and are also connected to the floor opening switches through connection 123. Both groups of switches are connected to the supply conductor 121. The push-button selector switches 32 to 35 are connected between the score counters 27 to 30 and the supply conductor 120. These switches serve to establish a circuit connection through any one of the score counters. The push-button switch unit 31 is of the type commonly employed in radio receivers embodying push-button tuning. Such a unit includes a

latch bar **124** which is common to all of the switches and which is biased by a spring (not shown) toward a latching position. Owing to the manner of illustration in Fig. 11, with the push-button switches shown one above another rather than horizontally aligned, the latch bar **124** appears in four places but it is actually a single element common to all of the switches. When any one of the push-buttons is depressed, the switch is latched in closed position and at the same time any previously closed switch is released by camming of the latch bar **124** by the push-button members. Since devices of this character are well known, the simple illustration and the above description are sufficient for the present purpose.

While it is practical to connect the score counters directly in circuit with the basket switches and the floor opening switches, as shown in Fig. 11, it is preferred to utilize a relay for operation of the foul counter through closure of the foul switches. Since the basket switches and the floor opening switches are closed by a ball passing through a basket or a floor opening, the time of closure of these switches is sufficient to actuate the operative score counter. However, the foul switches are closed by momentary impact of a ball against one of the vertical foul members, and the time of closure of the foul switches may not be sufficient for direct operation of the foul counter. Accordingly, as shown in Fig. 11, the foul switches are connected in circuit with the winding **125** of a relay **126** which is of the instantaneous pickup-delay dropout type. The normally open relay contacts **127** are connected in circuit with the solenoid **85** of the foul counter **36**. Whenever one of the foul switches closes, the relay closes its contacts to energize the solenoid **85**, and the relay contacts remain closed for a sufficient time interval to insure operation of the foul counter. It should be noted that this time interval, while appreciable, is very short and may be of the order of about two seconds.

As may be seen in Fig. 11, the switch **116** within the foul counter **36** is included in circuit with the lamps **102** and **114**, the lamps being connected in parallel relation. As described above, switch **116** is closed only when a foul count appears on the foul counter.

The quarter indicating lamps **128**, which are disposed behind the respective quarter indicating windows shown in Fig. 1, are connected in circuit with the manual selector switch **42**.

As previously mentioned, with the form of the game shown, employing four baskets each representing a different quarter or period of a game, the players or teams of players may be allowed a certain number of shots at each basket. In making the shots at a particular basket or in scoring a goal through a floor opening, the score of each player or team of players will be automatically totalized on the scoring counter which is in use. In using the game apparatus as illustrated, therefore, each player or team in turn depresses the push-button of their respective counter and then proceeds to carefully toss the balls toward the baskets in the order of the four indicated quarters. In the illustration of Fig. 11, push-button switch **32** is closed and counter **27** is ready for operation whenever a ball passes through the basket **15** and closes one of the switches **58** or passes through one of the floor openings **43** to **46** and closes one of the switches **73**. During the play of each player or team in any quarter, each basket goal scored will be registered on the operative score counter as two points and each time a ball passes through a floor opening, an additional point will be registered on the counter.

During the play of each player or team, foul shots will be registered on the foul counter **36**. Each foul shot may count one point in favor of the other players or teams or each foul shot may entitle the other players or teams to an additional free shot at a basket. At the end of the play by each player or team, the foul count on the foul counter will indicate the number of points to be awarded to the other players or teams or the number of free shots to be taken by the other players or teams. As soon as these free foul shots are taken or awarded to opposing players or teams, the foul counter is reset to zero in order to be in the correct position for the next player or team.

From the foregoing description, it will be seen that the invention provides a game which affords recreation and amusement and is also conducive to development of skill on the part of the players. While a particular form of the invention has been illustrated and described, this is merely for the purpose of disclosure and is not intended to limit the invention which contemplates such other embodiments and modifications as may occur to persons skilled in the art. Moreover, while the device illustrated has four baskets, it is within the purview of the invention to provide a single basket with an associated foul member. It will be apparent also that the balls may be thrown by a mechanical device instead of directly by the players.

I claim:

1. In a basketball game apparatus, at least one basket constituting a target with a horizontally disposed opening, a vertical rectangular backboard positioned proximate to said basket, a foul member of inverted "U" shape bordering the top and sides of said backboard and pivoted at the lower ends of its sides so that it provides a generally planar vertically arranged surface positioned to be struck by an inaccurately thrown ball, and means operable by a ball striking the surface of said foul member to indicate that a foul throw has been made.

2. In a basketball game apparatus, a simulated playing floor, at least one basket with a horizontally arranged opening and associated vertically arranged backboard, a foul member mounted adjacent to said backboard in position to be struck by a ball which would strike outside the bounds of the backboard, a translucent simulated foul line marker on said floor, normally-open switch means arranged for actuation by said foul member when the latter is struck by a ball, an electrically-operable counter controlled by said switch means to totalize foul throws striking said foul member, said counter including an indicator dial movable from zero position, a lamp mounted beneath said foul line marker, a switch on said counter in circuit with said lamp, and means to effect opening of said switch when said dial is in zero position and closure of said switch when said dial moves from zero position, whereby said foul line marker is illuminated whenever a foul count appears on the counter dial.

3. Apparatus according to claim 2, further including a lamp in the counter controlled by said switch to illuminate the counter dial whenever a foul count appears thereon.

4. In a basketball game apparatus, a floor having at least one opening therein of a size to permit passage of a playing ball, at least one basket mounted at one end of said floor to serve as a primary target at which balls are tossed, a pair of parallel connected switches arranged to be actuated successively by a ball passing through the basket, a single switch arranged to be actuated by a ball passing through said floor opening, the passage of a ball through said basket representing a field goal by the player who tossed the ball, and the passage of a ball through said floor opening representing a foul committed by an opponent, means connecting said last-mentioned switch in parallel relation with said first-mentioned switches, an electrically operable counter, and means connecting said counter in circuit with all of said switches, whereby said counter is operated twice when a ball passes through said basket and is operated once when a ball passes through said floor opening.

5. In a basket ball game apparatus, a floor having at least one opening therein of a size to permit passage of a playing ball, at least one basket mounted at one end of said floor to serve as a primary target at which balls

are tossed, a pair of parallel connected switches arranged to be actuated successively by a ball passing through the basket, a single switch arranged to be actuated by a ball passing through said floor opening, the passage of a ball through said basket representing a field goal by the player who tossed the ball, and the passage of a ball through said floor opening representing a foul committed by an opponent, means connecting said last-mentioned switch in parallel relation with said first-mentioned switches, an electrically operable counter, means connecting said counter in circuit with all of said switches, whereby said counter is operated twice when a ball passes through said basket and is operated once when a ball passes through said floor opening, a foul member mounted in proximity to said basket, the striking of said foul member representing a foul committed by the player who tossed the ball, a foul counter, and means operable by a ball striking said foul member to actuate said foul counter.

References Cited in the file of this patent

UNITED STATES PATENTS

808,147	Edwards	Dec. 26, 1905
1,116,555	Brewster	Nov. 10, 1914
1,221,803	Johnston	Apr. 3, 1917
1,507,343	Degenhardt	Sept. 2, 1924
1,577,959	Dunne	Mar. 23, 1926
1,995,872	Ukanavage	Mar. 26, 1935
2,040,228	Whiteley	May 12, 1936
2,192,430	Branner	Mar. 5, 1940
2,257,934	Bell	Oct. 7, 1941
2,413,952	Chervenka	Jan. 7, 1947
2,433,224	Koci et al.	Dec. 23, 1947
2,534,067	Rubin	Dec. 12, 1950