

May 13, 1969

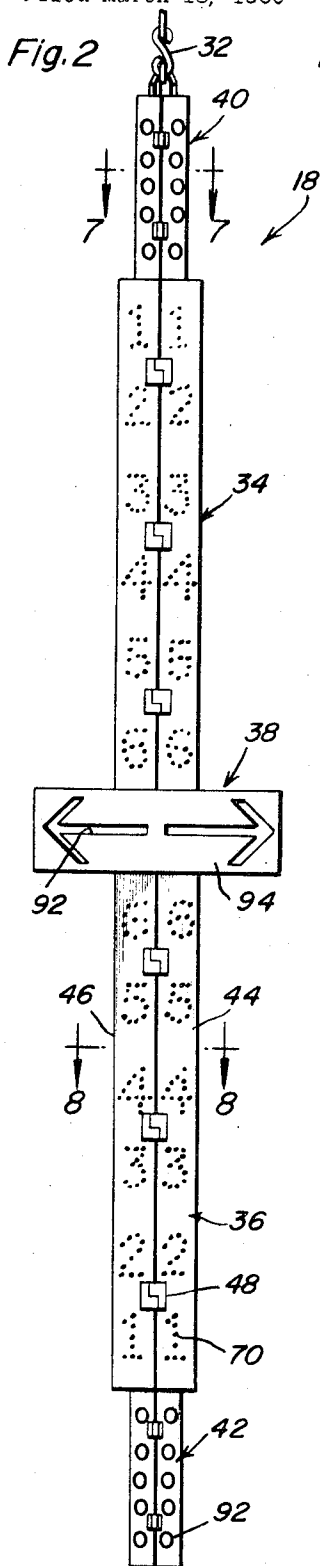
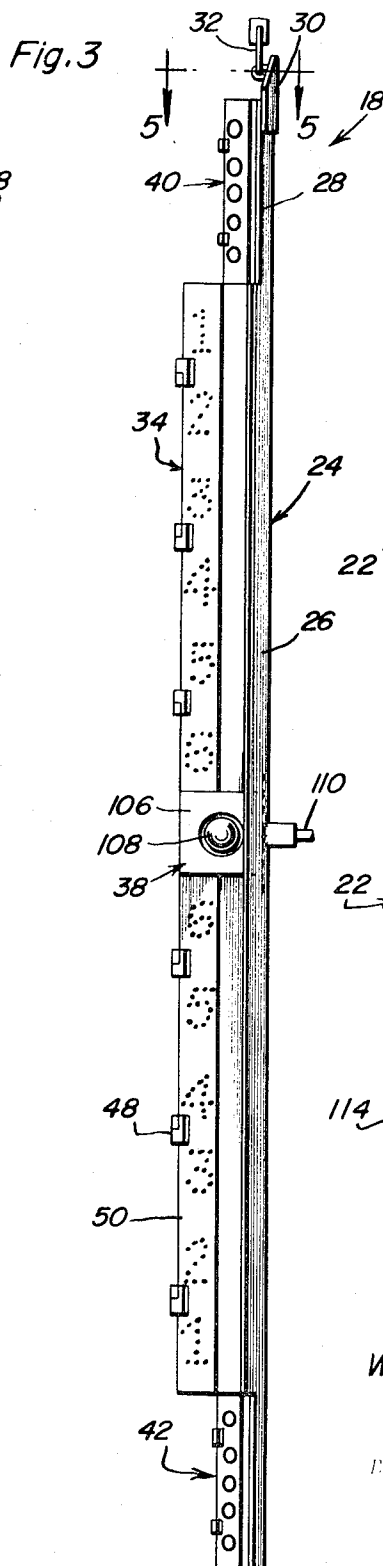
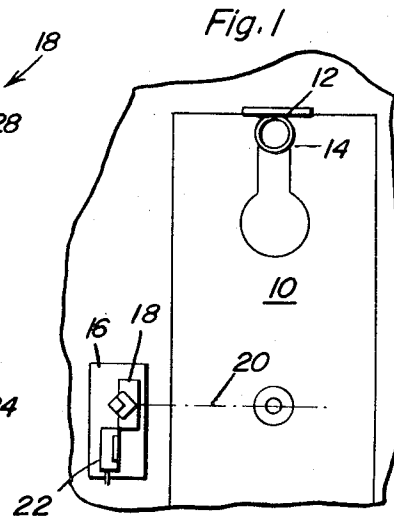
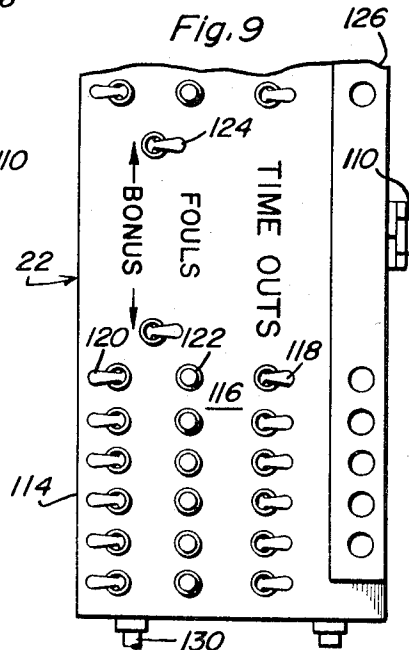
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3,444,548

BASKETBALL FOUL AND TIME-OUT INDICATOR

Filed March 18, 1966

Sheet 1 of 3



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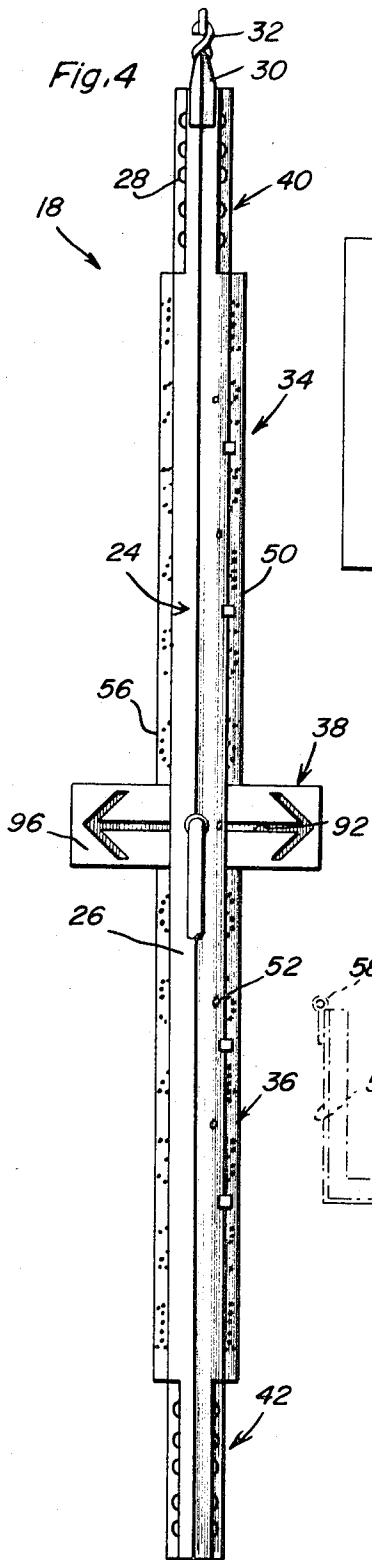
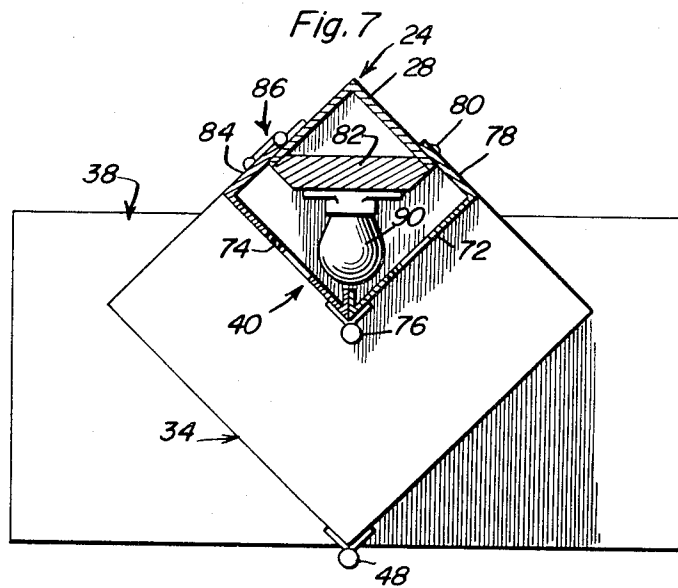
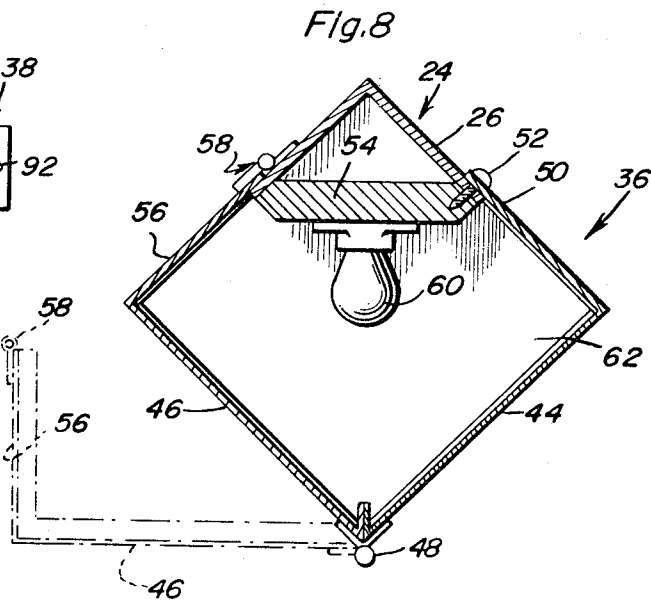
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BASKETBALL FOUL AND TIME-OUT INDICATOR

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Sheet 2 of 3



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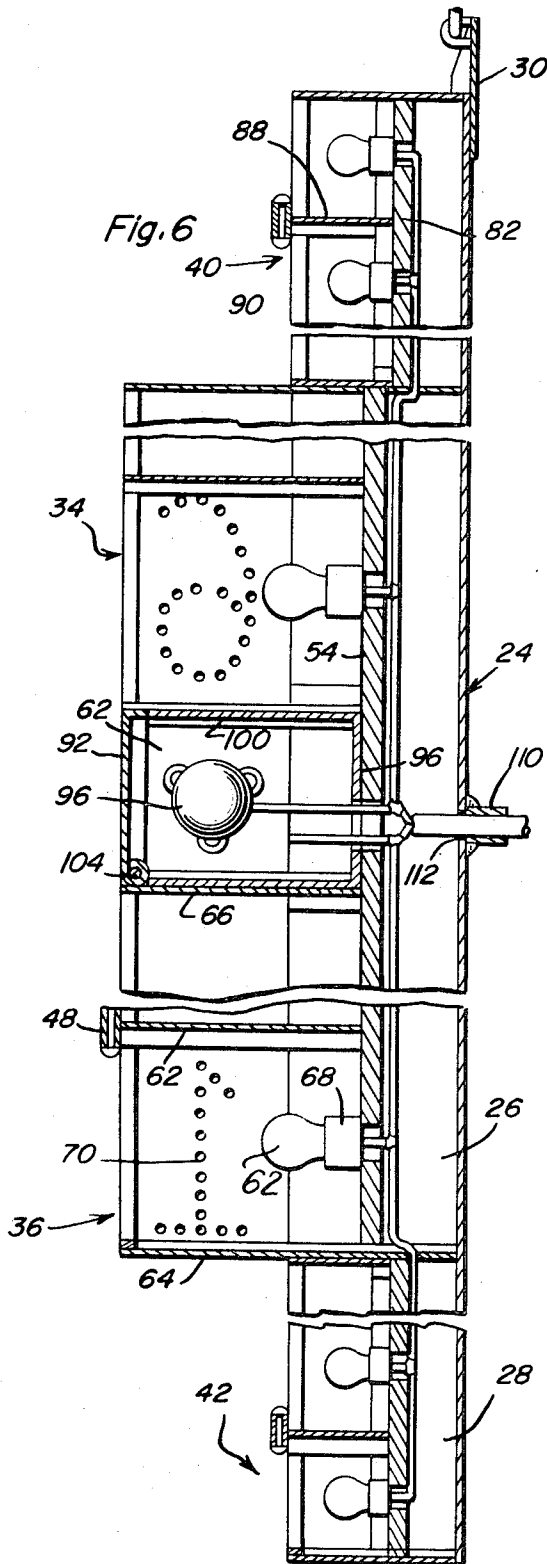
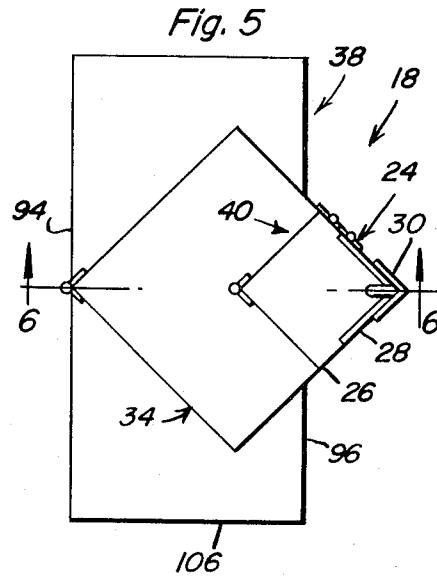
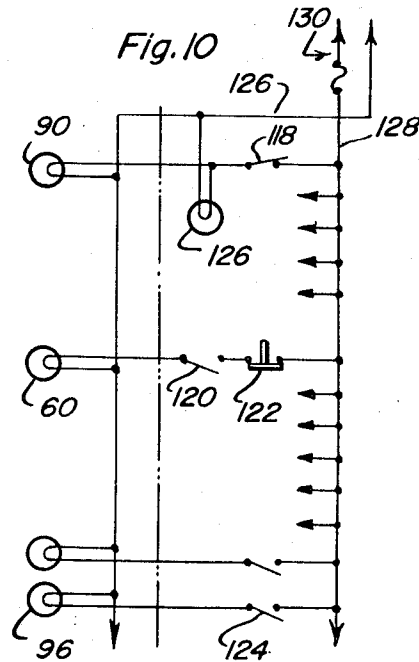
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BASKETBALL FOUL AND TIME OUT INDICATOR

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Sheet 3 of 3



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3,444,548
BASKETBALL FOUL AND TIME-OUT INDICATOR
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ABSTRACT OF THE DISCLOSURE

A vertically elongated post internally mounting a plurality of vertically spaced lamps above and below directional indicator assemblies extending laterally of the post intermediate upper and lower ends. Remote control means connected to the lamps in the post and the directional indicators control illumination to provide visible information regarding time-outs and fouls during a basketball game.

This invention relates to an indicator assembly particularly useful in connection with scoring of a basketball game.

It is therefore a primary object of the present invention to provide a remotely controlled, indicator assembly which will assist the scorer in maintaining an account of time-outs and fouls during a basketball game as well as to make such information available at a glance to both players and spectators.

An additional object of the present invention is to provide an indicator assembly of the aforementioned type by means of which information is displayed in a logical manner without confusion and may be viewed from all locations.

A further object of the present invention in accordance with the foregoing objects, is to provide an indicator assembly for basketball game or the like which is constructed in an economical fashion and is easy to maintain or repair.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a top plan view of a basketball court showing a typical installation of the indicator and control unit relative thereto;

FIGURE 2 is a front elevational view of the indicator assembly in a vertically suspended position;

FIGURE 3 is a side elevational view of the indicator assembly shown in FIGURE 2;

FIGURE 4 is a rear elevational view of the indicator assembly;

FIGURE 5 is a top view of the indicator assembly as viewed from section line 5—5 in FIGURE 3;

FIGURE 6 is an enlarged partial longitudinal sectional view taken substantially through a plane indicated by section line 6—6 in FIGURE 5;

FIGURE 7 is a transverse sectional view taken substantially through a plane indicated by section line 7—7 in FIGURE 2;

FIGURE 8 is a transverse sectional view taken substantially through a plane indicated by section line 8—8 in FIGURE 5;

FIGURE 9 is a partial top plan view of the remote control unit associated with the indicator; and

FIGURE 10 is an electrical circuit diagram corresponding to the indicator system of the present invention.

Referring now to the drawings in detail, it will be observed that FIGURE 1 illustrates a typical basketball court 10 having backboards 12 mounted above opposite

longitudinal ends and supporting basketball hoops 14. Located on one longitudinal side of the basketball court, is a scorer's table 16 above which may be suspended an indicator assembly 18 constructed in accordance with the present invention, the indicator assembly being aligned with the centerline 20 of the basketball court. Also mounted on the scorer's table is a remote control unit 22 through which the scorer is able to control operation of the indicator assembly 18.

Referring now to FIGURES 2, 3, 4 and 5, it will be observed that the indicator assembly 18 includes an elongated support member 24 in the form of a right angle member having leg portions 26 of a dimension greater than leg portions 28 formed adjacent the opposite longitudinal end portions of the support member. A suspension angle member 30 may be welded to the upper end portion of the support member 24 so that the indicator assembly may be suspended in a vertical position by means of the suspension hook 32, for example. It will, however, be appreciated that the indicator assembly may be vertically supported by the support member 24 in some other fashion as, for example, by means of brackets secured to the support member rearwardly thereof.

Mounted on the support member and projecting forwardly therefrom is an upper enclosure 34 and a lower enclosure 36 through which a longitudinal axis extends. The enclosures 34 and 36 are spaced from each other so as to mount therebetween, a direction indicating housing 38. Also mounted on the support member 24 and projecting forwardly from the dimensionally smaller leg portions 28, are a top enclosure 40 and a bottom enclosure 42.

The enclosures 34 and 36 are similar in construction and constitute the foul indicating portions of the indicator assembly while the enclosures 40 and 42 are also similar in construction to each other and geometrically similar in cross-section to the enclosures 34 and 36 but dimensionally smaller so as to form the "time-outs" indicator assembly. The housing 38 vertically spaces the enclosures 34 and 36 and extends laterally therebeyond to form a "bonus" indicator as will be explained hereafter.

Referring now to FIGURES 6 and 8 in particular, it will be observed that each of the enclosures 34 and 36 form chambers which are square in cross-section in conjunction with the legs 26 of the support member 24. Each enclosure therefore includes a pair of front display walls 44 and 46 which are interconnected to each other at a right angle by means of a plurality of vertically spaced hinges 48. The front wall 44 is connected to a rear display wall 50. Accordingly, the walls 44 and 50 may be formed from a sheet metal plate which is folded with a 90° bend in order to form the juncture between the walls 44 and 50. The wall 50 is, however, a little more than half the width of wall 44 so as to overlap the right angle support member 24 to which it is secured by the fastener screws 52, the fastener screws extending also into an illumination support bar 54 so as to form a rigid assembly of the support bar 54, the support member 24 and the interconnected walls 50 and 44 of the enclosures 34 and 36. The vertical sides of the support bar 54 are therefore beveled in order to lie flush against the inside of the leg portions 26 of the support bar as more clearly seen in FIGURE 8. The other front wall 46 of the enclosures also constitute display walls connected at right angles to the rear display walls 56. Accordingly, the walls 46 and 56 are also formed from sheet metal plate as in the case of the walls 44 and 50, the wall 56, however, being releasably connected to the support member 24 by a latch device 58 of any suitable form such as hinge elements interconnected by a removable cotter pin replacing the usual hinge bolt. It will therefore be apparent that each of the enclosures 34 and 36 may be opened by pivotal displacement of the interconnected walls 46 and 56 as

shown by dotted lines in FIGURE 8 in order to replace a lamp bulb of lamp 60, for example, mounted within the enclosures. Each of the enclosures 34 and 36 is therefore provided with vertically spaced partition walls 62. The lower enclosure 36 is also provided with a bottom cover plate 64 completely closing the enclosure and an upper plate 66 cut off at one corner to abut the illumination support bar 54 which extends between the upper and lower enclosures 34 and 36. A top cover plate similar to plate 64 closes the upper end of enclosure 34 which is provided with a lower end plate similar to plate 66.

The support bar 54 mounts the lamp bulb sockets 68 within the chambers separated by the partition walls 62 in order to form illuminated images through the display walls 44, 46, 50 and 56 of the enclosures. Each of the display walls is therefore provided with image forming apertures 70. The images formed in the illustrated embodiment, consist of numerals 1 through 6 on each of the display walls proceeding from the bottom to the top with respect to the lower enclosure 36 while proceeding from the top to the bottom with respect to the upper enclosure 34.

The upper and lower time-out enclosures 40 and 42 are geometrically similar in cross-section to the enclosures 34 and 36 but dimensionally smaller. Each of the enclosures 40 and 42 therefore include a pair of front display walls 72 and 74 interconnected at a 90° forward apex by vertically spaced hinges 76. The rear display wall 78 is connected at right angles to the front display wall 72 and overlaps the leg portion 28 of the support bar 24 so that it may be secured thereto by the fasteners 80 which extend into a separate illuminating support bar 82 in order to form a rigid assembly of the support bars 82, the support member 24 and the interconnected walls 72 and 78 of the enclosures 40 and 42. Each of the front display walls 74 on the other hand is connected at right angles to the rear display wall 84 which overlaps the leg portion 28 of the support member 24 and is releasably connected thereto by the latch devices 86 as more clearly seen in FIGURE 7. The enclosures 40 and 42 are also provided with vertically spaced partition walls 88 secured to the display walls of the enclosures and abutting the illumination support bars 82 in order to form separate chambers illuminated by the lamps 90 mounted on the support bars 82. The display walls of the enclosures 40 and 42 are therefore provided with vertically spaced windows 92 transmitting illumination from those chambers that are illuminated. Sequential extinction of the lamps 90 within the enclosures 40 and 42 will therefore reflect the number of "time-outs" utilized by the respective teams.

It will be appreciated from the foregoing, that the upper enclosures 34 and 40 provide information regarding the number of fouls and time-outs with respect to one team whereas the lower enclosures 36 and 42 provide the same type of information with respect to the other team. Accordingly, the lamps 60 and 90 within the upper enclosures 34 and 40 may provide illumination of a color different from the illumination provided by the lower enclosures 36 and 42 in order to further distinguish between the two teams.

A bonus situation which occurs when one team is awarded an extra or additional free throw is signified by illumination of one or the other of the arrows 92 formed on both a front wall 94 and a rear wall 96 of the housing 38 abutting and secured to the support bar 58 in any suitable fashion. A pair of lamps 96 are therefore mounted within separate chambers of the housing 38 by means of a partition wall 98 which substantially intersects the longitudinal axis of the indicator assembly and is connected to the rear display wall 96, a top wall 100 and a bottom wall 102. The front display wall 92 is pivotally connected to the bottom wall 102 by the hinge 104 so that the housing 38 may be opened for replacement of the bulbs associated with the lamps 96 on either side of the partition wall 98. It will also be apparent that the front

wall 94 substantially intersects the hinge axis of the enclosure hinges 48 parallel to the longitudinal axis of the indicator assembly and projects laterally therebeyond in order to accommodate the laterally extended arrow images 92 on both the front display wall and the rear display wall 96. The housing 38 is also closed at the longitudinal ends thereof by the side walls 106 having windows 108 illuminated by one of the lamps 96 in order to provide an indication of a bonus situation when viewing the indicator assembly from the side thereof as shown, for example, in FIGURE 3. An electrical cable 110 is therefore brought into the indicator assembly through an opening 112 in the support member as shown in FIGURE 6 so as to provide electrical energy for the illuminating lamps 60, 90 and 96 by wiring enclosed between the support member 24 and the illuminating support bars 54 and 82 assembled thereon.

The lamps are selectively illuminated by the scorer through the remote control unit 22 as aforementioned. Referring therefore to FIGURES 9 and 10, it will be observed that the remote control unit consists of a control box 114 having a top control panel 116 which mounts a plurality of switches including two sets of top row, toggle switches 118 labeled "time-outs." The scorer may thereby selectively extinguish the lamps 90 associated with the upper and lower enclosures 40 and 42 by displacing the switches 118 on either side of the control panel 116 corresponding to the two teams. A bottom row of two sets of toggle switches 120 are also mounted on the control panel 116 so that the scorer may selectively illuminate the chambers within the upper and lower foul indicator enclosures 34 and 36 by means of the lamps 60. Two sets of push button switches 122 are also mounted on the control panel corresponding to the foul selector switches 120, the switches 122 being connected in series with the switches 120 in order to cause a selected lamp 60 to flash or blink when the foul is initially registered on the indicator assembly by means of a switch 120. Also provided on the control panel are a pair of directional bonus switches 124 one of which is actuated in order to illuminate one of the lamps 96 associated with the bonus indicating housing 38. The control box 114 may also mount a local indicator lamp assembly 126 including lamps connected in parallel with each of the time-out indicator lamps 90 so as to provide illuminated indicia at the scoring table corresponding to the number of time-outs. Electrical energy is therefore supplied to the lamps 60, 90 and 96 from the control box 114 by 25 conductors in the illustrated embodiment so as to provide a supply line for each of the lamps 60, 90 and 96 and a common return line 126. Accordingly, a fused power line 128 is connected in parallel to each of the switches 118, 122 and 124, as shown in FIGURE 10, and extends to a suitable source of electrical energy through the power cable 130.

At the beginning of a basketball game, all of the lamps 90 associated with the upper and lower enclosures 40 and 42 are illuminated. As the game progresses, the lamps 90 within either the enclosure 40 or enclosure 42 are sequentially extinguished by actuation of the time-out switches 118 on either side of the control panel 116 of the remote control unit 22 as the corresponding teams are charged with time-outs. Thus, the enclosures 40 and 42 of the indicator assembly will furnish information with regard to the number of time-outs remaining for each of the teams. The time-out switches 118 are therefore numbered in opposite directions from the center of the control panel 116 and by this arrangement will reduce mistakes on the part of the scorer. Similarly, the bottom row of switches 120 will be actuated by the scorer in order to illuminate corresponding numbers on the foul indicator enclosures 34 and 36 in order to display information regarding the number of fouls charged to the players on the corresponding teams. By causing the foul number displayed to blink by use of the switches 122, this in-

formation may be signaled to the player by the scorer. Also, actuation of one or the other of the bonus switches 124 will enable the scorer to signify the team to which a bonus is awarded by illuminating one of the lamps 96 within the housing 38 so as to illuminate one or the other of the arrow images 92.

From the foregoing description it will be apparent that the information displayed on the indicator assembly 18 may be viewed from all directions in view of the polygonal shape of the enclosures and the information may be displayed thereon by a scoring official having other duties in view of the ease with which the information is transformed to the indicator assembly by the control unit 22. Further, the construction of the indicator assembly is such as to make it economic feasible as well as to facilitate the repair and replacement of the illuminating lamps. The dimensional difference between the enclosures 34 and 40 or 36 and 42 will avoid confusion between the information displayed by the respective enclosure while the upper and lower enclosures will be separated by the walls of the housing 38 extending at an angle to the enclosure walls in order to distinguish between the information corresponding to the respective teams playing.

What is claimed as new is as follows:

1. An indicator assembly for basketball games or the like comprising, an elongated support member, a pair of enclosures mounted in spaced relation on said support member along a longitudinal axis, each of said enclosures having a plurality of interconnected walls parallel to said longitudinal axis and facing in different directions relative to the axis, spaced partition means mounted within said enclosures to define separate chambers therein, a housing mounted between said enclosures and extending laterally therebeyond at an angle to each of the walls of the enclosures, illumination means mounted on said support member for illuminating said housing and each of said separate chambers within the enclosures, each of said enclosures having means forming images thereon when the chambers are illuminated, and directional indicating means mounted on the housing in parallel planes extending at said angle to the walls of the enclosures, each of said enclosures including hinge means pivotally interconnecting two of the walls along a hinge axis parallel to the longitudinal axis, means connecting another of said walls to the support member and releasable latch means connecting still another of said walls to the support member, said walls and support member forming in cross-section a flat-sided polygon, said directional indicating means comprising a pair of image forming walls of said housing, one of said housing walls substantially intersecting the hinge axis, and a partition wall mounted within the housing between the housing walls and substantially intersecting the longitudinal axis to form separate housing chambers illuminated by said illumination means.

2. The combination of claim 1 wherein said illumination means comprises an elongated support bar secured to the support member and extending through both of said enclosures in abutting relation to the housing, a plurality of lamps mounted on said support bar within each of said separate chambers of the enclosures, and a pair of lamps mounted on the partition wall within the separate chambers of the housing.

3. The combination of claim 2 including a second pair of enclosures secured to the support member at remote ends of the first-mentioned pair of enclosures, said second pair of enclosures being dimensionally different and geometrically similar in cross-section to the first pair of enclosures, and second illuminating means mounted within said second pair of enclosures.

4. The combination of claim 3 including remote control means connected to the first-mentioned and second illumination means for selectively illuminating the separate chambers within the first pair of enclosures and the housing and sequentially extinguishing illumination of

separate chambers within the second pair of enclosures by the second illumination means.

5. The combination of claim 4 wherein said remote control means comprises a control box, a plurality of foul selector switches connected to the first illumination means, a pair of bonus switches connected to the pair of lamps mounted on the partition wall of the housing, a plurality of time-out switches connected to the second illumination means, and signal flashing switches connected in series with the foul selector switches.

6. An indicator assembly for basketball games or the like comprising, an elongated support member, a pair of enclosures mounted in spaced relation on said support member along a longitudinal axis, each of said enclosures having a plurality of interconnected walls parallel to said longitudinal axis and facing in different directions relative to the axis, spaced partition means mounted within said enclosures to define separate chambers therein, a housing mounted between said enclosures and extending laterally therebeyond at an angle to each of the walls of the enclosures, illumination means mounted on said support member for illuminating said housing and each of said separate chambers within the enclosures, each of said enclosure walls having means forming images thereon when the chambers are illuminated, directional indicating means mounted on the housing in parallel planes extending at said angle to the walls of the enclosures, a second pair of enclosures secured to the support member at remote ends of the first-mentioned pair of enclosures, said second pair of enclosures being dimensionally smaller and geometrically similar in cross-section to the first pair of enclosures, second illuminating means mounted within said second pair of enclosures, and remote control means connected to the first-mentioned and second illumination means for selectively illuminating the separate chambers within the first pair of enclosures and the housing and sequentially extinguishing illumination of separate chambers within the second pair of enclosures by the second illumination means.

7. The combination of claim 6 wherein said remote control means comprises a control box, a plurality of foul selector switches connected to the first illumination means, a pair of bonus switches connected to the pair of lamps mounted on the partition wall of the housing, a plurality of time-out switches connected to the second illumination means, and signal flashing switches connected in series with the foul selector switches.

8. The combination of claim 6 wherein said illumination means comprises an elongated support bar secured to the support member and extending through both of said enclosures in abutting relation to the housing, a plurality of lamps mounted on said support bar within each of said separate chambers of the enclosures, and a pair of lamps mounted within the housing.

9. The combination of claim 8 wherein said remote control means comprises a control box, a plurality of foul selector switches connected to the first illumination means, a pair of bonus switches connected to the pair of lamps mounted within the housing, a plurality of time-out switches connected to the second illumination means, and signal flashing switches connected in series with the foul selector switches.

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