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Culbertson

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[45] **Apr. 17, 1973**

[54] **ILLUMINATED MARKER**

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[52] **U.S. Cl.** **340/323,** 340/321

[51] **Int. Cl.** **A63b 71/06**

[58] **Field of Search**.....340/323, 321, 378; 240/53, 72

[56] **References Cited**

UNITED STATES PATENTS

2,549,627	4/1951	Musch et al.	340/323 X
2,932,004	4/1960	Zurcher	340/378
3,444,548	5/1969	Davis	340/323

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[57] **ABSTRACT**

A vertical tier of lights are supported by brackets on a pair of elongated connector rods. Intermediate walls are located vertically between the lights and are supported by the connector rods. The lower ends of the connector rods are attached to a base plate which serves as a base support for a transparent plastic tubular body. The intermediate walls are snugly received within the body. The connector rods project upwardly through openings in a cover plate which rests on the upper end of the body. Wing nuts or the like are threaded onto the connector rods and used for securing the assembly together. The lights carry separate indicia and are separately controlled by a multi-position switch.

10 Claims, 4 Drawing Figures

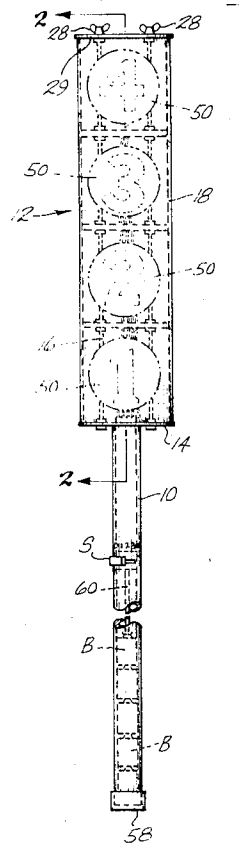


Fig. 1

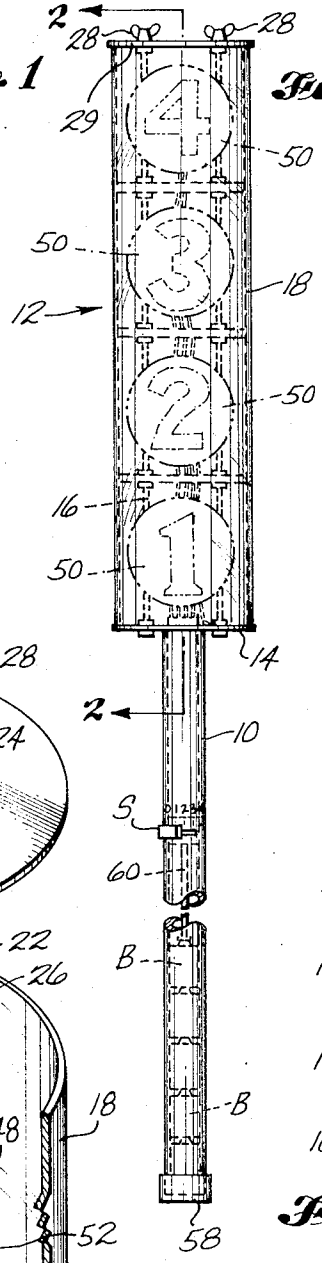


Fig. 2

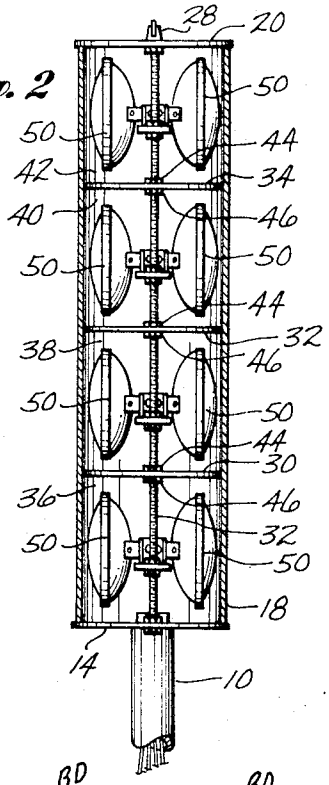


Fig. 3

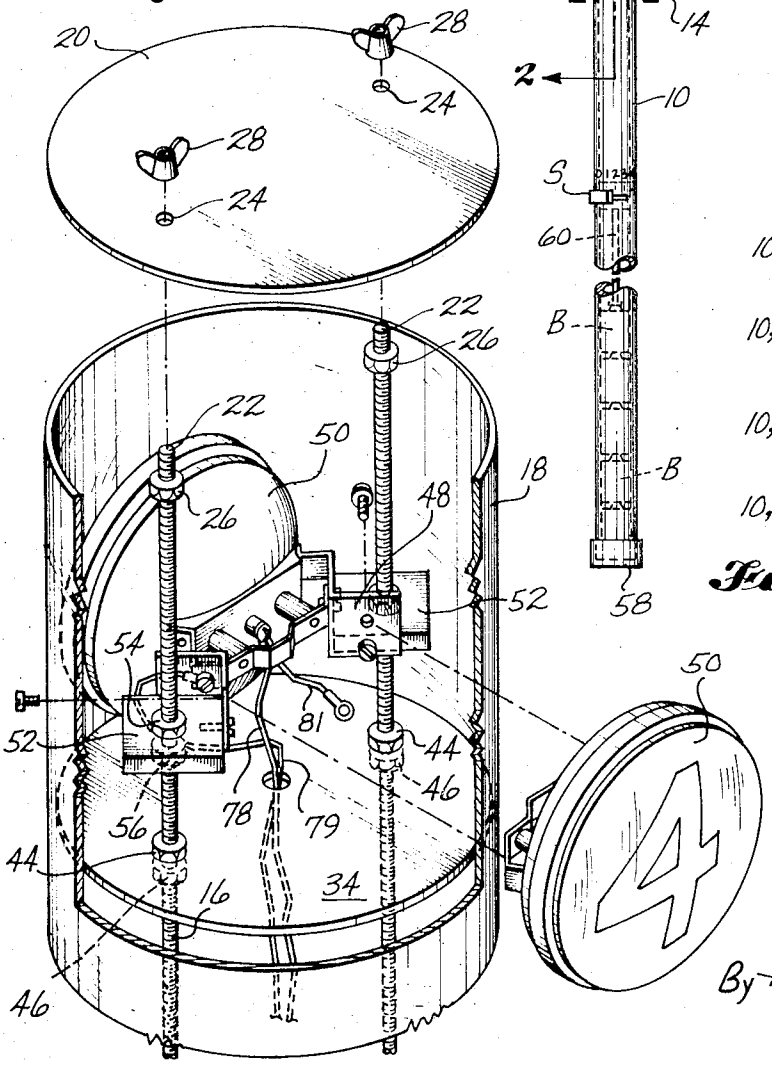
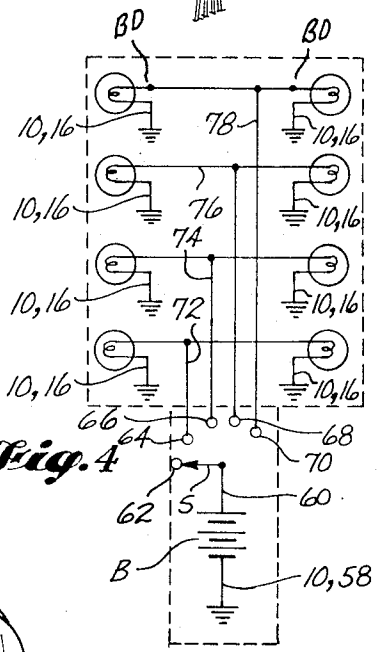


Fig. 4



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ILLUMINATED MARKER

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to illuminated information display devices, and in particular to such devices as sidelines down markers for football games and team foul indicators for basketball games.

2. Description of the Prior Art

In a football game the offensive team is given four downs in which to either advance the ball at least ten yards or relinquish control of the ball to the opposite team. Conventional apparatus for indicating from the sidelines the next "down" to be played includes a staff with four sheet metal leaves attached to its upper end. The leaves are marked "1,"" "2," "3" and "4," respectively. The leaf carrying number "4" is normally attached to the top of the staff, and the other three leaves are pivotally attached along their upper edges to the fixed leaf, so that they can be pivotally moved from positions forwardly of the fixed leaf to positions rearwardly thereof, for changing the "down" indication.

A disadvantage of this type of down marker is that it is quite often difficult for spectators to locate it at the sidelines, particularly during night games. It has been proposed to make down markers to include lights and to use a different distinctive color for each "down." However, the proposed markers of which I am aware are generally quite complex in their makeup and comprise a large number of specially constructed parts requiring a considerable amount of special manufacture, making the markers quite expensive to manufacture. An example of a previously proposed illuminated sidelines down marker is shown by U.S. Pat. No. 2,549,627, granted Apr. 17, 1951 to William F. Musch and Russell S. Katz.

Accordingly, there is a need for an illuminated down marker which is relatively simple in construction and can be economically manufactured, and at the same time is capable of exhibiting a relatively large illuminated signal for each down. The main object of this invention is to provide an illuminated down marker which fulfills these requirements. It is also an object to provide a marker or indicator for basketball team fouls which possesses the same advantages.

SUMMARY OF THE INVENTION

In preferred form, the marker or indicator of this invention is characterized by a head assembly comprising four pairs of numbered lights situated on top of a pole or staff which carries batteries for powering the lights and control circuitry. A base plate is connected to the upper end of the pole. A pair of connector rods are firmly secured at their lower ends to this plate and extend upwardly therefrom. The connector rods support four vertically spaced apart light assemblies, each light assembly comprising a pair of oppositely directed wide face light bulbs and a supporting bracket structure which is connected to the connector rods. The connector rods also support divider walls situated between the light assemblies, for dividing the illuminated head structure into separate compartments, one for each light assembly. A tubular (e.g. cylindrical) body member of clear plastic is slidable endwise down over the tier of light assemblies. The divider walls are sized to be snugly received within such member. The base plate is wider than the tubular body so that such body can rest on and be supported by such plate. The assembly includes a top cover which is also wider than the body. The connector rods project through openings in the cover. Wing nuts or the like are screwed onto the connector rods for clamping the various parts of the assembly together.

A suitable number of batteries are housed in a portion of the pole. A five position switch is mounted on the pole and is used for individually controlling the light assemblies. A "down" number is associated with each light of each assembly, and preferably the lights for each "down" have a distinctive color, so that a color as well as the number is associated with each down.

Additional features of the invention will be apparent from the following description taken in conjunction with the drawing.

BRIEF DESCRIPTION OF THE DRAWING

In the drawing like letters and numerals refer to like parts, and:

FIG. **1** is a side elevational view of a preferred embodiment of the invention, with a midportion of the pole or staff cut away to indicate indeterminate length, such view looking towards a tier of numbered lights on one side of the downs marker;

FIG. **2** is a fragmented longitudinal sectional view taken through the upper portion of the downs marker substantially along line **2—2** of FIG. **1**;

FIG. **3** is a fragmentary isometric view of the upper light region of the downs marker, with a side wall portion of the head cut away and certain parts spaced outwardly from their assembly positions, for clarity of illustration; and

FIG. **4** is a circuit diagram.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring more specifically to the several figures of the drawing, and particularly first to FIG. **1**, the down marker is shown to comprise a pole or standard **10** and an illuminated head assembly **12** supported at the upper end of standard **10**. In preferred form a lower support plate **14** is rigidly secured to the upper end of the standard **10**. A pair of connector rods **16** are secured at their lower ends to the plate **14** and extend upwardly therefrom through the head assembly **12**. Head assembly **12** also includes a tubular body member **18** which rests on and is supported at its lower end by the plate **14**. A second plate **20** forms a cover or upper end wall for the head assembly **12**. Plate **20** rests on the upper end of head member **18**. The connector rods **16** include threaded upper end portions **22** which extend through openings **24** provided in cover **20**. A seat nut **26** (FIG. **3**) may be provided on each threaded portion **22** below the cover **20**. Wing nuts **28** or the like are threaded onto the end portions **24** of the rods **16** above plate **20**, for releasably holding the head assembly **12** together and in rigid securement to the pole or standard **10**.

As best shown by FIGS. **1** and **2**, the head assembly **12** is interiorly divided into four separate compartments **36, 38, 40, 42** (FIG. **2**) by a plurality of vertically spaced apart intermediate walls **30, 32, 34**. The con-

nector rods **16** are threaded in the region of each wall **30, 32, 34** to receive upper and lower support nuts **44, 46**, respectively. As best shown by FIG. **2**, the end plates **14, 20** are slightly larger in transverse dimension than the tubular member **18**, whereas the compartment forming wall members **30, 32, 34** are sized and shaped to snugly fit within the inside dimension of member **18**.

According to the invention the connector rods **16** are used to support a light assembly in each of the compartments **36, 38, 40, 42**. Each light assembly comprises a support bracket **48** and a pair of wide face lights **50**. As best shown by FIG. **3**, each bracket **48** includes a pair of mounting blocks **52**, apertured to receive the connector rod **16**. Blocks **52** are made from an insulative material. The rods **16** are threaded in the regions of the blocks **52**. Upper and lower clamping nuts **54, 56** threaded on each connector rod **16** immediately above and immediately below each block **52**.

The brackets **48** include structure for supporting the lights **50** in back-to-back positions within the compartments **36, 38, 40, 42** in the manner illustrated, with the front faces of such lights **50** being vertically oriented when the pole **10** is vertically oriented.

Starting at the lower end of head assembly **12**, the two lights **50** in the first compartment are provided with the number "**1**" on the faces thereof. The lights **50** in the next compartment **38** are provided with the number "**2.**" The two lights **50** in the third compartment **40** are provided with the numeral "**3.**" The lights **50** in the fourth or top compartment **42** are provided with the numeral "**4.**" In addition, each pair of lights may be made to illuminate as a different color from the rest. The example, the two lights **50** showing number "**1**" may be white lights. The two lights **50** showing the number "**2**" may be green lights. The two lights **50** showing the number "**3**" may be amber or yellow lights. The two lights **50** showing the number "**4**" may be red lights. Also, the two lights **50** showing the number "**4**" may include an element in their circuitry causing them to blink, as will hereinafter be explained in greater detail.

Preferably the plates **14, 20** and the interior walls **30, 32, 34** are made from an impervious sheet material. Tubular wall **18** may be a cylindrical sleeve of a transparent structural plastic material. The tubular member **18** meed only be transparent in the regions thereof directly outwardly from each light **50**. The other regions of member **18** may be made semi or completely light impervious. The different colors may be provided by using a different translucent material for forming the numerals "**1,**" "**2,**" "**3**" and "**4**" on the faces of the lights **50**. Alternatively, the faces of the lights **50** may be colored in the regions thereof bordering the numerals. Or, the colors and numerals may be provided on member **18** immediately outwardly of the lights **50**.

Referring again to FIG. **1**, the standard or pole **10** is shown to include a battery receiving compartment at its lower end, closed by a lower end cap **58**. The pole **10**, cap **58**, plate **14**, and portions of the brackets **48** may be made of metallic materials to form the "ground" path of an electrical control circuit. Such a circuit is schematically illustrated by FIG. **4**. A plurality of short batteries B (or a single long battery) are located within the battery compartment (FIG. **1**). The battery compartment cap **58** is assembled over the lower end of pole **10**. Cap **58** is in contact with the lower end of the lower battery and with the side wall of tube **10**. The negative terminal of each light **50** is connected to the metallic bracket member **48** which supports the light **50**. These bracket members **48** are connected by wires **79** to the plate **14** or to pole **10**. The upper end of the upper battery B contacts the lower end of a rod **60**. The upper end of rod **60** is connected to one end of a multi-position switch S. As schematically shown by FIG. **4**, the switch S has a normally open position **62**, a first circuit making position **64**, a second circuit making postion **66**, a third circuit making position **68**, and a fourth circuit making position **70**. When switch S is in position **62** the movable contact arm of the switch is insulated from the grounded pole **10**. When the contact arm is in position **64** it is in contact with a conductive member which through wiring **72** is connected to the "-positive" terminals of the lower lights **50** which show the number "**1.**" When the contact arm of switch S is in position **66** it is electrically connected via wiring **74** with the positive terminal of the two lights **50** which show numeral "**2.**" When the switch contact arm is in position **68** its contact arm is in circuit making contact with wiring **76** connected to the positive terminal of the lights **50** which show number "**3.**" When the switch contact arm is in its fourth position **70** it is in circuit making contact with wiring **78** (FIG. **3**) which is connected to the positive terminal of the upper pair of lights **50** which illuminate number "**4.**" As schematically illustrated in FIG. **4**, a "blinker" device BD may be associated with each fourth down light **50** as an additional reminder that a fourth down situation exists.

As a modified embodiment, the illuminated marker of the present invention might be provided with a fifth compartment housing a fifth pair of numbered lights, adapted to light the number "**5.**" In such embodiment each tier of five lights could be operated by a separate multi-position switch so that the device could be used by sideline officials at a basketball game for indicating the number of team fouls committed by each team in a period. The marker could be pole mounted, as in the preferred embodiment, but provided with a large base at the lower end of the pole for supporting the complete assembly on the floor. Or, the head assembly alone could be provided with the base for mounting it on a table. Such a team foul marker could include a longitudinal wall between the two lights of each pair of lights. The pairs of lights could be supported so that their faces are separated by an acute angle or point in substantially the same direction. Also, one tier of lights may be labeled by an "H," designating the home team, and the other may be identified by a "V," designating the visiting team.

The invention may be embodied in other specific forms without departing from the spirit or central characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore to be embraced therein.

What is claimed is:

1. An illuminated indicator comprising a base, at least one connector rod secured at its lower end to the

base and projecting upwardly therefrom, a plurality of transverse walls connected to connector rod and spaced therealong from each other and from said base to form a plurality of compartments, a bracket in each compartment secured to the connector rod, and at least one light connected to each bracket, a tubular body sized to slip over and snugly receive all of said transverse walls, and to sit on and be supported by said base, a cover sized to extend across the upper end of said body, said cover including an opening therein for receiving the upper end portion of said connector rod, fastener means connectible to the upper end of the connector rod above said cover, and an electrical energy source for said lights, including means for selectively controlling said lights, and said tubular body being light emitting in at least those portions thereof spaced forwardly of said lights.

2. An illuminated indicator according to claim 1, wherein said connector rod is threaded and each light bracket and each transverse wall includes an opening through which the connector rod passes, and each bracket and each wall is secured to the connector rod by upper and lower nuts on the connector rod which are screwed into clamping contact with each bracket and wall.

3. An illuminated indicator according to claim 1, wherein the portion of the connector rod projecting upwardly above the cover is threaded and a nut is screwed onto such portion and down against such cover, and serves to clamp the tubular body between said base and said cover.

4. An illuminated indicator according to claim 1, wherein said base is secured to the upper end of an elongated pole, and said electrical energy source includes battery means inside said pole.

5. An illuminated indicator according to claim 1, comprising a pair of laterally spaced apart connector rods of the character described, wherein each bracket and each end wall includes openings therein for receiving the connector rods, and such walls and brackets are secured to the connector rods by clamp means around said openings situated partially below and partially above the brackets and the walls.

6. An illuminated indicator according to claim 5, wherein each bracket supports two oppositely directed wide faced lights.

7. An illuminated indicator according to claim 6, wherein each pair of lights in each vertical compartment is provided with a distinguishing item of indicia.

8. An illuminated indicator according to claim 7, wherein each item of indicia is a numeral.

9. An illuminated indicator according to claim 7, wherein each item of indicia is a color.

10. An illuminated indicator according to claim 1, comprising four separate compartments and at least one light in each compartment, each light having a wide face and having a numeral associated therewith, with said numbers ranging from one through four, and with the light associated with the numeral four being a blinking light.

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