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FIG. 1

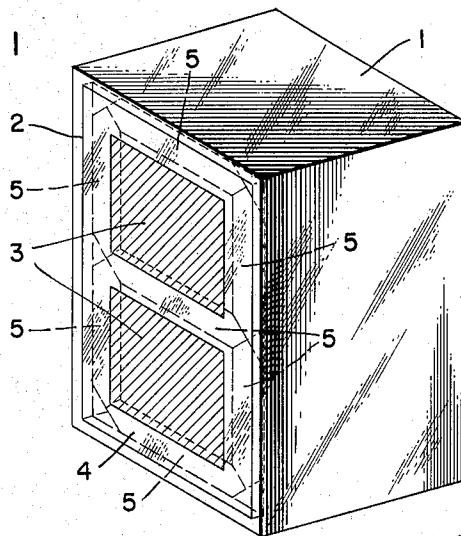
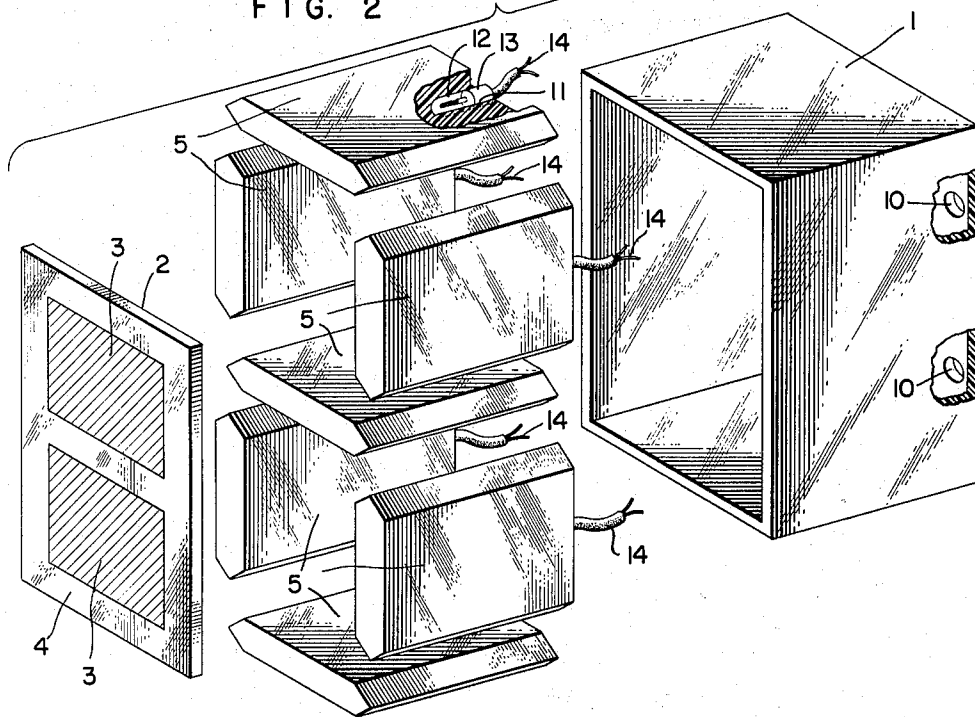


FIG. 2



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This invention relates to indicators. More specifically, the present invention relates to digital indicators.

An object of the present invention is to provide an improved digital indicator.

Another object of the present invention is to provide an improved digital indicator having a facility for a plurality of digital representations.

Still another object of the present invention is to provide an improved digital indicator capable of being rapidly assembled and disassembled.

A further object of the present invention is to provide a digital indicator having a rugged and economical construction.

A still further object of the present invention is to provide an improved digital indicator, as set forth herein, having a simple operation and structure.

In accomplishing these and other objects, there has been provided, in accordance with the present invention, a digital indicator having a plurality of similarly shaped and sized light transmitting segments arranged in a figure-eight configuration. A separate bulb is provided to illuminate the interior of each segment. The front faces of the segments are arranged to be viewed as selectively illuminated elements forming digital representations. A box enclosure is provided to secure the segments and bulb in the aforesaid configuration.

A better understanding of the present invention may be had when the following detailed description is read in connection with the accompanying drawings, in which:

FIG. 1 is a pictorial representation of the digital indicator embodying the present invention.

FIG. 2 is an exploded representation of the digital indicator shown in FIG. 1.

Referring to FIG. 1 in more detail, there is shown a digital indicator having a rigid rectangular hollow box enclosure 1 with one open end and a characterized face plate 2. The face plate is provided with a pair of opaque areas 3 and a transparent area 4 surrounding the opaque areas 3. Inside the box 1 are a plurality of similarly sized and shaped rectangular segments 5. The segments 5 are preferably made of Lucite to provide a light guiding medium while the face plate 2 may be made of any suitable material, including plastic, to provide the aforesaid transparent and opaque characteristics.

The segments 5 are each arranged to have two peaked ends forming a substantially right angle and two flat ends joining and alternating with the peaked ends. The two side faces of each of the segments 5 are substantially flat surfaces. The peaked ends are capable of being mated with other peaked ends to form a contiguous arrangement. For example, one side of a peaked end of a segment may be joined to a side of a peaked end of another segment to form an approximately right angle corner. Further, two peaks of two segments may be butted in a straight line with their apexes in contact to form a right angle opening to receive the peaked end of another segment. Using these combinations, two of the segments 5 are paired on one long side of the rectangular box 1 in a peak-to-peak configuration. Similarly, two other segments 5 are identically positioned on another side of the box 1 parallel to the aforesaid side. A fifth segment 5 is positioned across the center of the box 1 with its end peaks mating with the right angle openings formed by the peak-to-peak arrangement of two pairs of segments along the long sides

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of the box 1. A sixth segment 5 is positioned along a short side of the box 1 with its peaked ends forming a right angle with respective peaked ends of the segments 5 positioned along the long sides of box 1. Similarly, a seventh segment 5 is arranged on the other short side of box 1 to mate with the peaked ends of the segments 5 on the long sides of box 1. This configuration is effective to provide an array of segments 5 within the box 1 having a figure-eight appearance when viewed from the open end of the box 1.

As shown in the exploded representation shown in FIG. 2, closed end of box 1 opposite the open end is arranged to have a plurality of discretely arranged holes 10. The back surface of each segment 5 is arranged to have a concave aperture 11, as shown in a cut-away view of one of the segments shown in FIG. 2. A bulb 12 and socket 13 are provided within the aperture with a pair of electrical connecting wires 14 extending away from the back surface of the segment 5. When the segments 5 are arranged in the box 1, the wires 14 are brought out of the box 1 through the holes 10. Accordingly, at the back of the box, the wires for each bulb 12 for each segment 5 are available to apply an energizing signal thereto.

The internal dimensions of the box 1 are proportioned to provide a snug fit for the outside dimensions of the segments 5 when assembled as discussed above. The transparent area 4 of the cover plate 2 is arranged to provide a view of the flat ends of the segments 5 while the opaque areas 3 obscure the two hollow spaces within the aforesaid figure-eight configuration. Thus, an energization of a bulb 12 in a segment 5 is effective to illuminate the interior of the segment 5 which provides a light guide means between the bulb 12 and the front face of the segment 5. This guided light, then, emerges from the front face of segment 5 and passes through a portion of the transparent area 4 of plate 2 directly in front of the illuminated segment.

By selectively energizing the bulbs 12, the illumination of the segments may be used to form the digits zero to nine. For example, if all the bulbs are lit, the indicator forms the digit eight. Illumination of segments other than the one selected is prevented by the angle of the peaked ends to provide internal reflection whereby the light rays do not pass to an adjoining segment. Alternatively, the peaked ends may be coated with an opaque material; e.g., paint, to stop the light rays from emanating from the peaked ends. Additional modifications, such as altering the shape of the mating segment ends or coating the inside of the box 1 with a non-reflective coating, may also be used without departing from the invention disclosed herein. It is to be noted that the digital indicator of the present invention has a rugged and economical structure with a minimum number of parts and complete interchangeability between the segments. Further, the indicator may be rapidly disassembled and assembled by simply removing the front plate 2 and sliding the segments 5 out from the box 1 and vice versa. Such a structure is effective to facilitate any needed repair or maintenance of the indicator.

Accordingly, it may be seen that there has been provided, in accordance with the present invention, a digital indicator for providing a plurality of discrete digital representations while featuring a rapid assembly and disassembly facility, a simple operation and a rugged economical construction.

What is claimed is:

1. A digital indicator comprising a plurality of similarly shaped and sized rectangular light transmitting segments, said segments each having two opposite ends each formed in a characterized interlocking configuration to mate with a similar end on another segment, light means operative to selectively provide a light source for illuminating the in-

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terior of each of the segments, and a box having an internal perimeter operatively engaging said segments to retain said segments in an interlocking arrangement with said characterized ends in a mating relationship.

2. A digital indicator comprising a plurality of similarly shaped and sized rectangular light transmitting segments, said segments each having two opposite ends each tapered in a peaked configuration enclosing a substantially right angle to mate with a similar end on another segment, light means operative to selectively provide a light source for illuminating the interior of each of the segments, and a box having an internal perimeter operatively engaging said segments to retain said segments in an interlocking arrangement with said characterized ends in a mating relationship.

3. A digital indicator as set forth in claim 2 wherein said light means comprises a plurality of light bulbs and bulb holders, said segments each having a concave recess in a non-characterized end to receive a respective one of said bulbs and bulb holder.

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4. A digital indicator as set forth in claim 3 wherein said box means is arranged to retain said segments in a figure-eight configuration formed by adjacent non-characterized ends of said segments.

5. A digital indicator as set forth in claim 4 wherein said box means includes a generally transparent face plate operative to cover the visible non-characterized ends of the segments and having two opaque areas thereon to mask the enclosed spaces in the figure-eight configuration.

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