Sept. 22, 1970 H. J. HAMPEL 3,530,462

CHARACTER DISPLAY MODULE HAVING OCTAGONAL LAMP SOCKETS

Filed June 18, 1969

FIG. 1

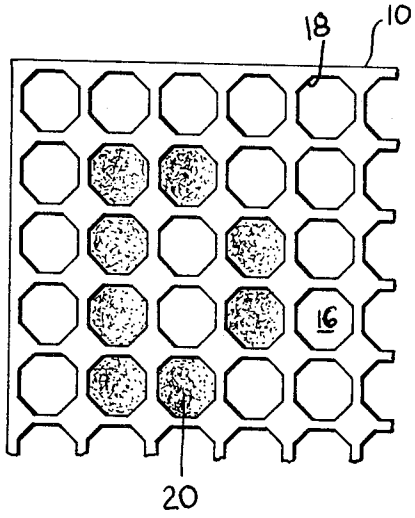


FIG. 2

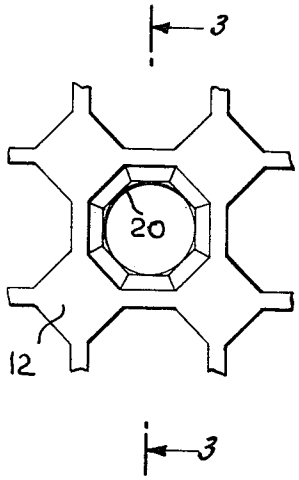
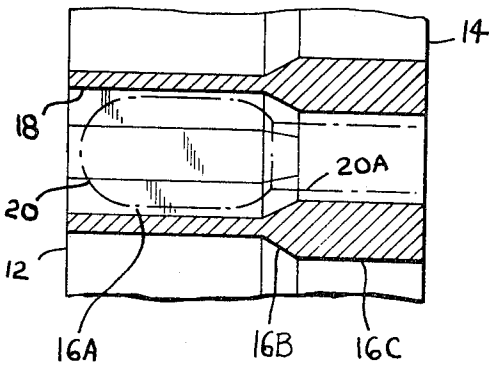


FIG. 3



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CHARACTER DISPLAY MODULE HAVING OCTAGONAL LAMP SOCKETS

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U.S. Cl. 340—381 6 Claims

ABSTRACT OF THE DISCLOSURE

A member is provided with a plurality of transversely extending bores arranged in rows and columns. Each bore has a cylindrical section which in cross section defines a regular octagon. The inner surfaces of each cylindrical section are coated with light reflecting material. A separate tubular lamp can be disposed in each bore. When certain of these lamps are selectively energized, one or more characters are formed which can be viewed from ends of the bores which expose the lit and unlit lamps.

BACKGROUND OF THE INVENTION

Various electronic systems are adapted to receive information in the form of electrical equivalents of alpha-numeric characters and to reproduce these characters in the form of traveling visual displays such as moving ticker displays used in reporting stock market transactions. These systems can employ large numbers of individual display elements in the form of small neon type lamps which are arranged in rows and columns and can be selectively lit and darkened to product the display.

However, in such systems, the lit lamps form dots or circles of light having dark separations therebetween whereby the characters are formed in dotted line. Dotted line characters are not as pleasing to the eye and are not as easy to read as characters in solid line. I have discovered that when such lamps are disposed in a suitable matrix wherein each lamp has a separate reflector of specified geometry, the dark separations between adjacent dots of light can be minimized and the characters, as viewed in conventional manner from a distance of several feet or more, appear to be formed in solid line. The resultant display is easier to read and is more pleasing to the eye.

SUMMARY OF THE INVENTION

In accordance with the principles of my invention, I employ an elongated member having front and rear flat parallel surfaces with a plurality of closely spaced parallel bores extending transversely between said surfaces. The bores are arranged into rows and columns. Each bore is provided with a hollow cylindrical section extending from the front surface towards the rear surface. Each section, in cross section, has the shape of a regular octagon. A light reflective coating is applied over the inner surfaces of each section.

I further provide a like plurality of lamps of tubular shape. Each lamp has one end which emits light when the lamp is energized and an opposite end adapted to be connected to a source of electricity. Each lamp is disposed in a corresponding bore, with the light emitting end in the section and adjacent the front surface, and the opposite lamp end being accessible from the rear surface.

When certain lamps are selectively energized, the light emitting ends thereof, as viewed from the front surface, define one or more characters such as letters or numbers for display.

By virtue of the octagonal shape of the bores, the displayed characters, as viewed from conventional viewing distances, appear in solid line.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a front view of my module;

FIG. 2 is an enlarged front detail view thereof; and

FIG. 3 is a cross sectional view taken along line 3—3 in FIG. 2.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Referring now to FIGS. 1–3, a flat elongated relatively thin member **10** formed of plastic or the like is provided with a flat front face **12**, a flat parallel rear face **14**, and a plurality of bores **16** extending transversely between the two faces and arranged in rows and columns.

Each bore has a first section **16A** which extends between the front surface and a point intermediate the front and rear surfaces and a second section which extends between the intermediate point and the rear surface. The first section forms a hollow cylinder which in cross section has the shape of a regular octagon. The second section forms both a second hollow cylinder **16C** having in cross section the shape of a circle smaller in area than the octagon and a shoulder portion **16B**. Portion **16B** extends between and interconnects cylindners **16A** and **16B**. Section **16A** has a light reflective coating **18** applied to all inner surfaces thereof.

A like plurality of neon lamps **20** of tubular shape are employed. Each lamp is disposed in a corresponding bore with a light emitting end **20A** being adjacent the front surface, the main tubular body being disposed in section **16A**, and the lamp base **20B**, which is to be disposed in a socket or otherwise arranged to receive the activating electrical voltages, being disposed in the second bore section.

When one or more lamps are energized and emit light, the resultant image, as viewed from the front surface at a distance of a few feet or more, forms alpha-numeric characters having apparently solid lines.

The bores are so arranged, as viewed from the front surface, that all bores in any column have first and second equal sides which are parallel and extend transversely to the center line of the column; all bores in any row each have third and fourth equal sides which are parallel and extend transversely to the center line of the row; all bores in diagonals moving inclinedly downwards from left to right each have fifth and sixth equal sides which are parallel and extend transversely to the center line of the diagonal; and all bores in diagonals moving inclinedly downwards from right to left each have seventh and eighth equal sides which are parallel and extend transversely to the center line of the diagonal.

These limitations on the geometry of the cross sectional shape of the bores, as viewed from the front surface, mean that the shape must be a regular octagon. All other shapes will not have pairs of parallel equal sides extending transversely to row, column and diagonal center lines and thus will not have the proper form factor for producing a solid line type presentation as viewed along one or more of these center lines.

What is claimed is:

1. A character display module comprising:

a flat elongated member having front and rear surfaces with a plurality of parallel bores extending transversely between said surfaces, said bores being arranged in rows and columns, each bore having a hollow section extending from the front surface

toward the rear surface, said section forming a hollow cylinder having a cross section in the shape of a regular octagon; and

a light reflective coating applied over the inner surfaces of each section.

2. A module as set forth in claim 1 wherein, as viewed from the front surface, each bore has first and second parallel sides which extend transversely to the center line of any column, third and fourth parallel sides which extend transversely to the center line of any row, fifth and sixth parallel sides which extend transversely to the center line of any diagonal moving inclinedly downwards from left to right and seventh and eighth parallel sides which extend transversely to the center line of any diagonal moving inclinedly downwards from right to left.

3. A module as set forth in claim 2 wherein the said section of each bore extends between the front surface to a point intermediate the front and rear surfaces, each bore havng an additional and differently shaped hollow section extending between the intermediate point and rear surface.

4. A module as set forth in claim 3 further including a like plurality of lamps of tubular shape, each lamp having one end which emits light when the lamp is lit

and an opposite end adapted to be corrected to a source of electricity, each lamp being disposed in a corresponding bore with the light emitting end being disposed in the hollow octagonal section and the opposite lamp end being disposed in the additional section.

5. A module as set forth in claim 4 wherein each additional section includes an additional hollow cylinder of circular cross section and a shoulder extending between and interconnecting the section of octagonal cross section to the section of circular cross section.

6. A module as set forth in claim 5 wherein the cross sectional area of the section of circular cross section is less than the cross sectional area of the section of octagonal cross section.

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HAROLD I. PITTS, Primary Examiner

U.S. Cl. X.R.

340—324, 336, 366