United States Patent

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[54] **COLOR ORGAN**
3 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **340/337,** 340/332
[51] **Int. Cl.** **G09f 13/04**
[50] **Field of Search** ..... 340/337, 324, 335, 334, 332; 40/132 D, 52 A, 132 E

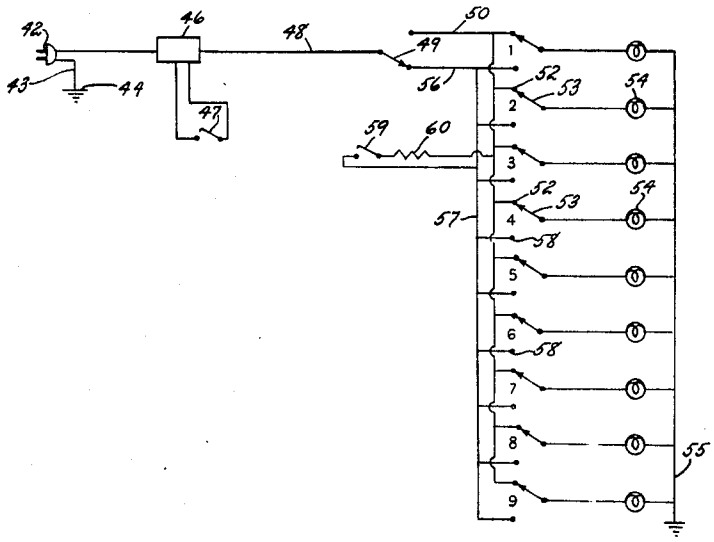
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ABSTRACT: A manually operated color organ, including a keyboard consisting of manually operated electrical switches, and a display having illuminated compartments or segments, the keyboard corresponding in configuration to the arrangement pattern of the display. Means is provided for supplying illumination of varying colors to each illuminated segment of the display, and a separate keyboard is provided for each color.



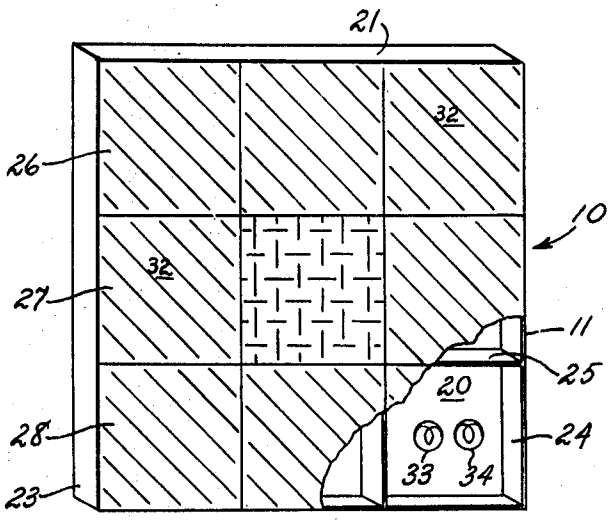
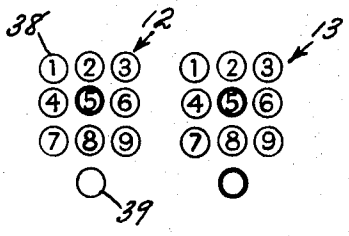


Fig. 1



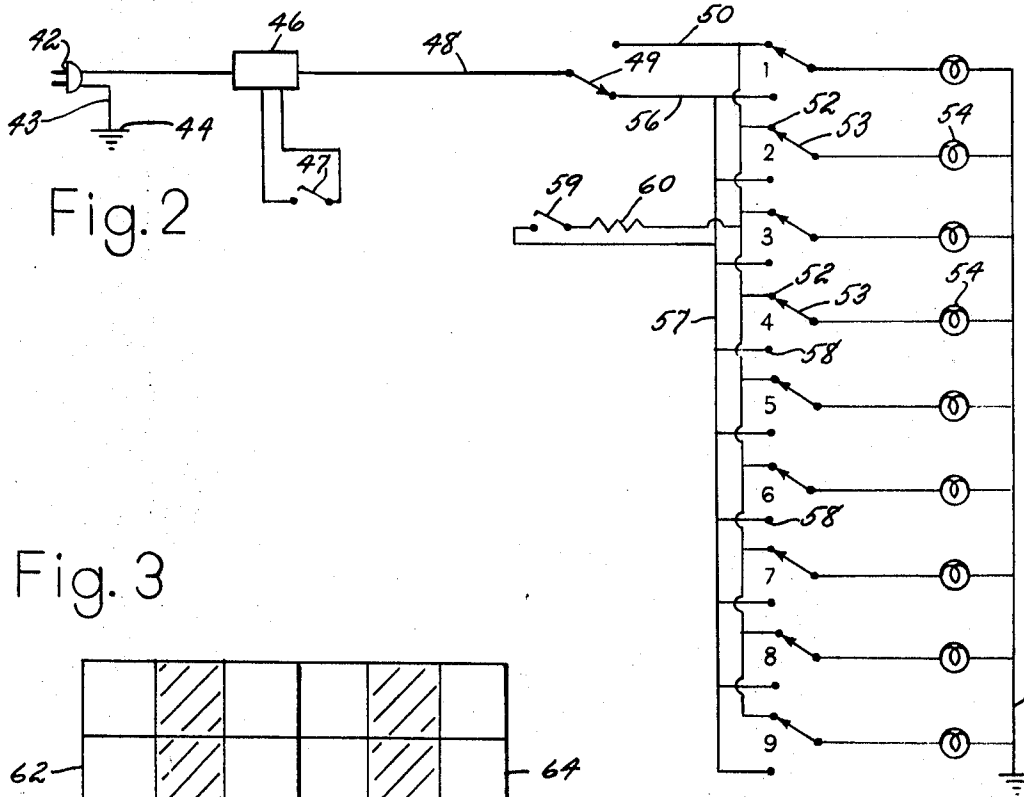
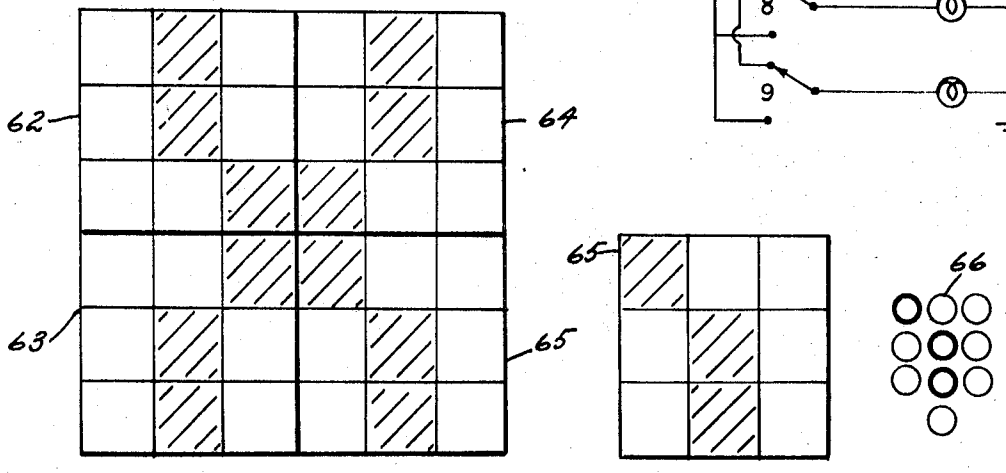


Fig. 2

Fig. 3



COLOR ORGAN

This invention relates generally to the field of color organs, a term applied to illuminated display devices in which patterns of light are created in response the the closing of switches on a manually operated keyboard. Devices of this type are known in the art, and the invention lies in specific constructional details which permit more rapid and varied control over a multitude of light sources for artistic, entertainment or advertising purposes.

It is among the principal objects of the present invention to provide an improved color organ in which there is provided a remotely located display including a plurality of illuminable sections or compartments which are selectively operated by manually closing a switch, the rapid serial closure of a plurality of switches resulting in the display of light in controlled sequence.

Another object of the invention lies in the provision of a manually controlled keyboard in which the switches are located in geometric pattern corresponding to the location of corresponding illuminable segments in the display element, whereby the operation of the same is facilitated, and is in accordance with the properties of visual space, rather than being arranged in a linear row of keys corresponding more to the linear high-low dimension found in music.

A further object of the invention lies in the provision of a cluster arrangement of switches comprising an operator's keyboard, which permits operation not only by means of fingers, but the palms and wrists of the operator, as well as a convenient tool, such as a rubber ball.

A further object of the invention lies in the provision of a means for providing steady illumination to all of the sources of light of any chosen color comprising the display, wherein actuation of the switches comprising the keyboard of that color causes these lamps to be extinguished rather than illuminated, thereby rendering certain rapid, difficult or previously impossible transformations to be readily accomplished.

A feature of the disclosed embodiment lies in the provision of means for allowing all of the sources of illumination of one or more chosen colors not being employed at a given time to be illuminated at a lower than normal level, thereby providing a "background".

Another feature of the disclosed embodiment lies in the provision of means for inducing a vibrato as a modifier for light in a manner analogous to that in which it is used for the modification of musical sound.

These objects and features, as well as other incidental ends and advantages, will more fully appear in the progress of the following disclosure, and be pointed out in the appended claims.

In the drawing, to which reference will be made in the specification, similar reference characters have been employed to designate corresponding parts throughout the several views.

FIG. 1 is a schematic view of an embodiment of the invention.

FIG. 2 is a schematic wiring diagram of the embodiment for one color, that of others being exact duplicates.

FIG. 3 is a schematic view of an alternate form of the embodiment.

In accordance with the invention, the device generally indicated by reference character **10**, comprises broadly: a display element **11** and a plurality of keyboards, two of which are indicated by reference characters **12** and **13**.

The display element **11** is conveniently fabricated to boxlike configuration, and includes a continuous rear wall **20**, an upper wall **21**, a lower wall **22**, as well as sidewalls **23** and **24**. A plurality of septums **25** divides the interior of the element **11** into first, second and third rows **26**, **27** and **28**, respectively of compartments, all being covered by translucent pane **32**. Disposed within each compartment are first and second electric bulbs **33** and **34**, respectively, each controlled by a keyboard **12–13**, respectively.

The keyboards **12** and **13** are identical, each including a plurality of control buttons **38** positioned in a pattern corresponding to that of the compartments **26–28**, and a "negative" button **39**, the purpose of which will more fully appear hereinafter.

Referring to FIG. **2**, there is schematically illustrated wiring diagram corresponding to the embodiment shown in FIG. **1**. A power source **42** includes one conductor **43** which is grounded at **44**. A second conductor **45** is connected in series with a vibrato device **46**, which is selectively placed in operation by the closing of a switch **47**. This device may be in the form of an electronic oscillator, a motor or other rotating device periodically closing and opening a switch, or a simple magnetic vibrator serving the same purpose. A conductor **48** leads to a "-negative" switch **49**, operated by the above mentioned negative button **39**. The switch **49** selectively completes a circuit to a conductor **50**, in turn connected to a conductor **51** to which are connected the first terminals of a plurality of manually operated pressure sensitive switches **53** which are correspondingly numbered in FIGS. **1** and **2** by numbers **1** through **9**, depending upon their relative location. Each switch controls a lamp **54**, which will be of the same color, one lamp being disposed within each compartment of rows **26–28**. A conductor **55** leads to ground, thus completing the circuit. The switch **49** also alternately connects a conductor **56**, leading to a conductor **57** interconnecting the second terminals **58** of the switches **53**. Thus, when the "negative" switch **49** is placed in the position shown in FIG. **2**, all of the switches **53** which are resiliently biased to one position will conduct current to the lamps **54**, manual pressure upon the buttons **38** resulting in opening of an individual circuit and extinguishing the corresponding lamp.

Reference character **59** designates a "background" switch which is connected in series to a resistor **60** bridging the conductors **51** and **57**. Upon closing of the switch **59**, the resistance becomes effective and results in a current passing through the lamps **54** and through the resistance **60**, resulting in the lamps being illuminated at a lower than normal intensity. The operation of control buttons will cause the flow of current to the particular lamp concerned to be bypassed and thus permit the same to glow at their normal intensity. In this manner, the remaining lamps may serve as background for the actuated display.

Referring to FIG. **3** in the drawing, there is illustrated an alternate form of the embodiment, generally indicated by reference character **61**, and consisting in essence of four display elements **62**, **63**, **64** and **65** which are essentially identical to the display element **11**. They are connected to a single keyboard or other control unit (not shown) **66** in symmetrical form, as may be observed by noting the compartments illuminated in response to manual pressure upon the control buttons **38** as indicated, whereby a kaleidescopic effect is achieved.

I wish it to be understood that I do not consider the invention limited to the precise details of structure shown and set forth in this specification, for obvious modifications will occur to those skilled in the art to which the invention pertains.

I claim:

1. In a color organ, a display element including a group of illuminated compartments arranged in predetermined pattern, a plurality of electrically powered sources of colored illumination associated with each of said compartments, and a corresponding plurality of keyboards having switches corresponding in number and relative position to said pattern, each of said switches being connected in series to one of said sources of colored illumination, each of said switches having first and second selectively engageable terminals thereon, a first power conductor connected in parallel to each of said first terminals, and a second power conductor connected in parallel to each of said second terminals; and switch means on each of said keyboards selectively connecting one of said power conductors to a source of electrical power, whereby when a predetermined number of sources of illumination are illuminated by placing the corresponding switches in a first position, operation of said last-mentioned switch will extin-

guish said predetermined number of sources of illumination, and illuminate the remainder of said sources of illumination.

2. Structure in accordance with claim 1, including resistence means selectively interconnectable between said first and second power conductors.

3. Structure in accordance with claim 1, including a plurality of groups of illuminated compartments arranged in symmetrical orientation, each of said groups being interconnected to said keyboards for simultaneous operation.