June 18, 1968 R. ABRAMS 3,389,248

DWELL LIGHT

Filed Oct. 23, 1965

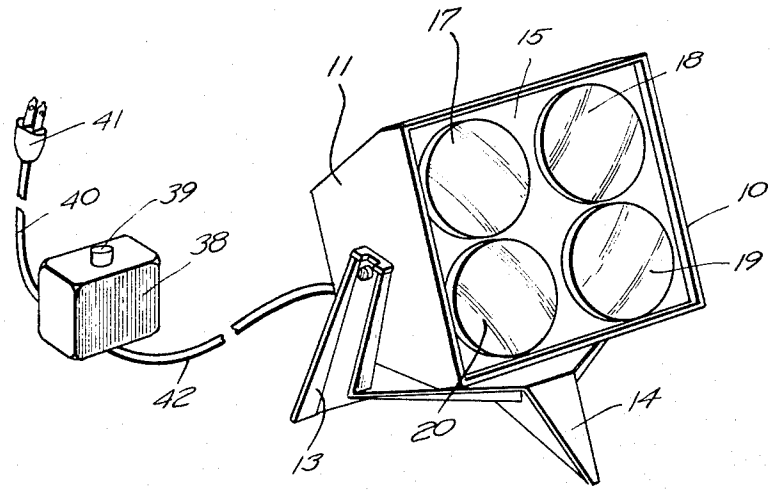


FIG. 1

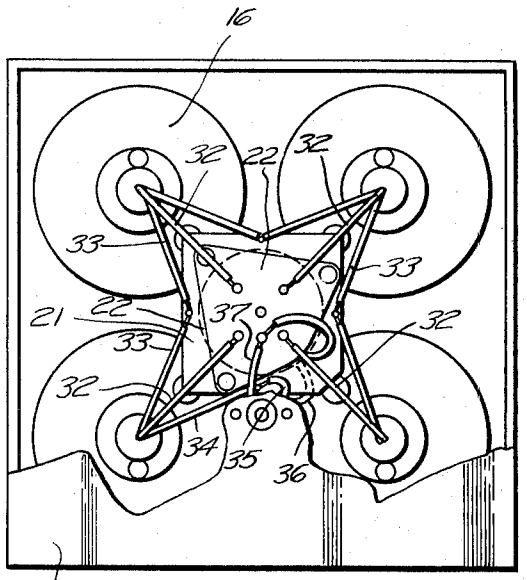


FIG. 2

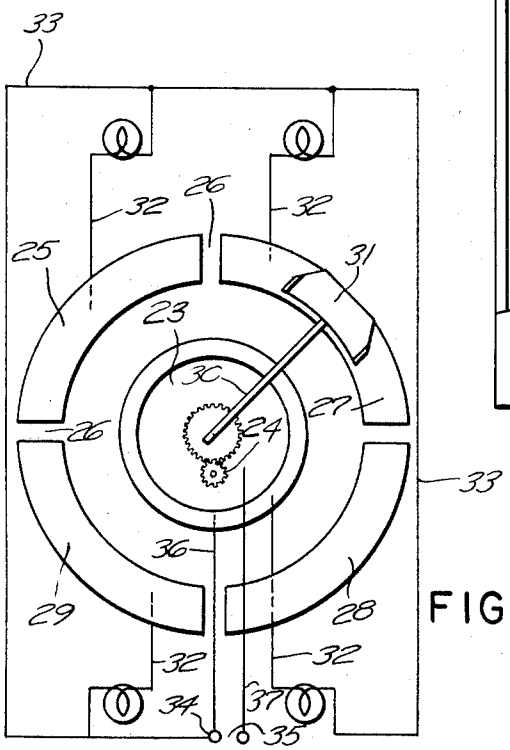


FIG. 3

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DWELL LIGHT

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ABSTRACT OF THE DISCLOSURE

A dwell light in which the front wall of a molded plastic housing is provided with a plurality of multicolored lenses with reflector lamps behind them. A low voltage motor drives a contact arm slowly in a circle to successively contact arcuately spaced elements for lighting each lamp. By elongating the contact elements and the contact end of the moving arm, a dwell effect is created, each light remaining on for a predetermined period when the next succeeding light goes on.

My present invention relates to decorative lighting effects and more particularly to a novel construction of a dwell light.

The principal object of the present invention is to provide a novel decorative light construction which successively projects a plurality of colored lights.

A further object of the present invention is to provide a light construction utilizing a plurality of colored lights which can be used to light up a Christmas tree or similar decorative effects.

Another object of the present invention is to provide a dwell light construction having a minimum number of readily moldable parts.

Another object of the present invention is to provide a light construction utilizing low voltage and molded parts to produce a decorative dwell light effect at a minimum of cost.

A further object of the present invention is to provide a decorative dwell light with a novel circuitry for lighting a plurality of colored lights in succession with low voltage.

With the above and other objects and advantageous features in view, my invention consists of a novel arrangement of parts more fully disclosed in the detailed description following, in conjunction with the accompanying drawings and more particularly defined in the appended claims.

In the drawings,

FIG. 1 is a perspective view of a dwell light embodying my present invention.

FIG. 2 is a rear view of the same with the back wall partially broken away.

FIG. 3 is a diagrammatic view of the electrical circuit involved.

It is customary to provide colored spotlights and clusters of colored lights for decorative effect such as lighting a Christmas tree or even objects in a store window display. In commercial displays, many devices have been used to turn the lights on and off in successive order to provide a plurality of color effects. The present invention is designed to provide a simple and economically manufactured unit which can be used in the home for producing a decorative effect. The present invention utilizes a cluster of different colored lights with a dwell effect. This ensures that more than one light will go in on a given time and the lights go on successively to produce a pleasing visual effect.

Referring more in detail to the drawings illustrating my invention I provide a rectangular housing **10** having an open front, sides **11** and the rear wall **12** preferably of integral molded plastic construction. The housing **10** will

be provided with a pivoted bracket **13** which may have an integral spike portion **14** for anchoring in the ground in outdoor displays. I now provide a front wall **15** also molded of plastic material and having integrally molded therewith a plurality of conically shaped light socket and reflector portions **16**. In the illustrated form four light sections are illustrated. At the front, see FIG. 1, each section is covered by a plastic lens **17** each of a different color. For example, for purposes of illustration, the lens **17** may be red, the lens **18** may be green, the lens **19** may be blue, and the lens **20** may be yellow.

Mounted to the rear of the socket portions **16**, see FIG. 2, is a rectangular plate **21**. Mounted behind the plate **21** and spaced from it is a printed circuit board **22** having a central annular conductive disc portion **23** and spaced therefrom in annular form, a plurality of segmental strips each covering a quadrant and separated from the adjacent strip by an intervening space **26**. As can be seen in FIG. 3, the central disc **23** is surrounded by segments **25**, **27**, **28** and **29**, separated by spaces **26**. The above described circuit connections, illustrated in FIG. 3, are mounted on board **22** as shown in FIG. 2 and face in the opposite direction towards the front of the housing. A small 12 v. electric motor, not shown, is mounted towards the front behind the front **15** and between the reflector portions **16**. The motor operates at approximately 400 r.p.m. and by a succession of gears **24**, drives a conductive arm **30** at approximately 4 r.p.m. The arm **30** is electrically in contact with the central disc **23** and extends across to an arcuate shoe portion **31** which wipes the segments **25**, **27**, **28** and **29** successively.

Now viewing FIGS. 2 and 3, each light is provided with a line **32** connecting it to one of the segments. The second cord **33** connects to each light. One end of cord **33** connects at **34** to one pole of a phone jack connection **35** mounted in the rear wall **12**. This connection is also provided with a line **36** leading to one of the motor leads. The other side of the phone jack **35** is connected by a line **37** to the plate **23** and by a connecting line to the other motor lead. Power is supplied by providing a small class two transformer **38** having an on and off switch **39** for controlling the primary current passing through a standard cable **40** and contact plug **41** for connecting to 110 v. house current. Since the transformer **38** reduces the current to 12 v. a light line **42** may be used having a phone jack for insertion into the phone jack connection **35**.

With the illustrated and above described hookup, when the current is turned on the motor starts the rotation of the wiper arm **30**. In the position shown in FIG. 3, the current will pass from the disc **23** in the center through the wiper arm **30** the wiping shoe **31** at the outer end into the segment **27** and from the segment **27** through a line **32** through the lamp into the line **33** and out the other side to lines **34** and phone jack **35**. This will light the lamp in the upper right hand corner in FIG. 3 connected to the segment **27**. When the shoe **31** reaches the segment **28**, it will similarly light the light in the bottom right hand corner and so on around the circle. Whenever the shoe **31** straddles the gap **26** the lights connected to each segment will go on. The length of the shoe **31** is equal approximately to one half of one of the segments **25**, **27**, **28** and **29**. If the drive of the arm **30** is approximately four revolutions per minute, it will make one revolution in approximately fifteen or sixteen seconds, so that it will take the shoe to ride across each segment, four seconds. However, since the shoe is one half of a segment, when it reaches the next segment it will still take two seconds to pass over the previous one. With this arrangement each light will be on for six seconds, for the first two seconds in conjunction with the previous light for the next two seconds all alone for the last two seconds in conjunction with the next light which goes on. There-

fore, successively each light goes on first with the previous light, after the previous light goes out the next light goes on and the light stays on for an additional two seconds. Therefore each light will dwell while the next light goes on so that the combination is called a dwell light.

By utilizing a simple printed circuit connection, small motor and transformer and mated parts, the light can be manufactured at a minimum of cost and assembled with a minimum of labor. Other advantages of the present invention will be readily apparent to a person skilled in the art.

I claim:

1. A decorative light comprising a housing having sides, an integral back and an open front, a front member for said housing having a plurality of lens openings arranged in sequence, a lens mounted in each opening, said lenses being of different colors, a lamp socket portion behind each opening, a plurality of contact elements, each socket being electrically connected to one of said contact elements, a contacting arm for successively contacting said elements to complete a circuit to each of said sockets, and means for rotating said arm to provide a sequential lighting of said colored lens openings, said contact elements comprising arcuate strips of conductive material arranged in a segmented circle, said rotatable arm being mounted

at the center of said circle and having an electrically conductive wiping shoe at its free end adapted to slide over said strips of material, said wiping shoe being approximately the length of one half of one of said strips, whereby said shoe will straddle adjacent strips to produce a dwell effect on said lights.

2. A decorative light as in claim 1, wherein said front member is of molded plastic material and said lamp socket portions are molded integrally with said front member behind each lens opening, and said rotating means comprises a low voltage motor and a transformer for reducing house current to a low voltage for said motor and lights.

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