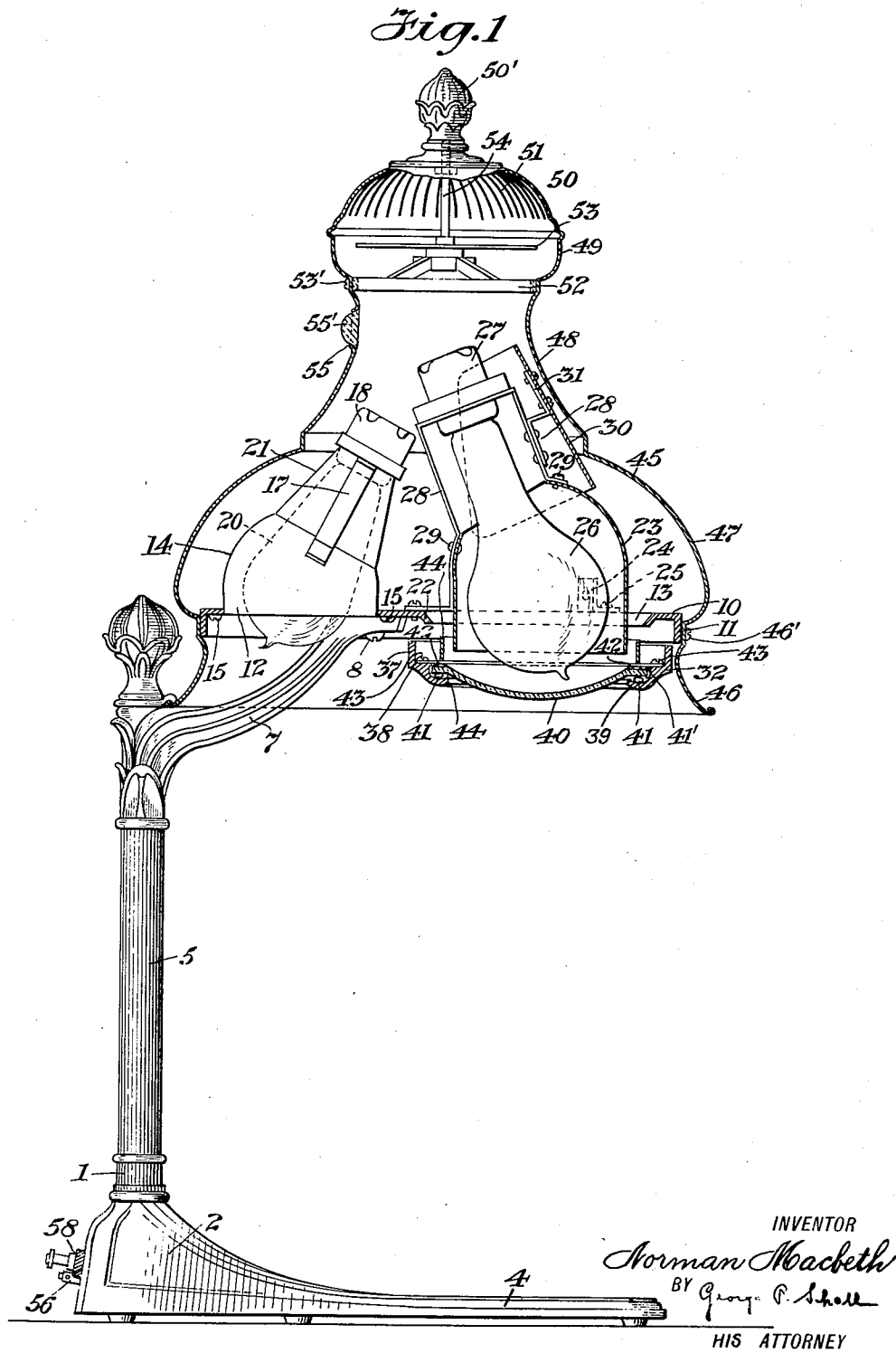


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N. MACBETH.
COLOR IDENTIFYING APPARATUS.
ORIGINAL FILED DEC. 24, 1919.

1,442,166.

2 SHEETS—SHEET 1.



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UNITED STATES PATENT OFFICE.

NORMAN MACBETH, OF NEW YORK, N. Y.

COLOR-IDENTIFYING APPARATUS.

Application filed December 24, 1919, Serial No. 347,211. Renewed June 10, 1922. Serial No. 567,463.

To all whom it may concern:

Be it known that I, NORMAN MACBETH, a subject of the King of Great Britain, and resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Color-Identifying Apparatus, of which the following is a specification.

My invention concerns a portable electric illuminating apparatus, primarily intended for the purpose of alternately illuminating colored objects, such as dress goods or the like, with ordinary artificial light such as is produced by an incandescent electric lamp, and with light equivalent to daylight, my apparatus being adapted to be used in connection with the method of procedure described by me in my U. S. Patent No. 1,249,443 of December 11, 1917.

The object of my invention is to provide an apparatus of compact and simple construction, which is portable and can easily be moved about, which can be manufactured cheaply and efficiently and which is so arranged that the various parts thereof are easily accessible for inspection and repair.

A further object of my invention is to so construct my apparatus; that an interference or mixture of the lights emitted by the different light sources is obviated. A further object of my invention is to provide for the effective and adequate ventilation of my apparatus and for the distribution and equalization of the heat generated therein, so that the exterior of my apparatus will be heated uniformly to a comparatively low maximum temperature. I furthermore provide for a convenient location of the electrical connections and the switches whereby the light sources are cut in and out of the circuit and are alternately operated.

My apparatus is illustrated in the accompanying drawings. Fig. 1 of the said drawings represents my apparatus partially in vertical cross-section. Fig. 2 is a front elevation of the same, partially broken away to show the arrangement of the inner parts. Fig. 3 is a wiring diagram, showing the electrical connections in my apparatus.

In the drawings, the numeral 1 represents an upright stand, having a hollow base 2, provided with two outwardly-extending arms 3 and 4, for the purpose of imparting to the stand the necessary stability without the same being unduly heavy. From the

said base 2 there rises a vertical hollow standard 5, from the upper portion of which two arms 6 and 7 extend outwardly in the same direction as the base arms 3 and 4. At their outward extremity the said arms 6 and 7 are fastened by means of screws 8 and 9 to the underside of a circular plate 10, the rim of which is bent downwardly so as to form a flange 11, extending downwardly at right angles to the plane of the said plate 10.

The said plate 10 is also provided with two circular apertures 12 and 13, the aperture 12 being smaller in diameter than the aperture 13.

The aperture 12 is covered by a lamp reflector 14 of sheet metal, and the lower edge of the said reflector 14 is turned outwardly at right angles and is fastened to the underside of the above-mentioned plate 10 by means of screws 15.

Supported from the said reflector 14 by means of two strips 16 and 17, the upper portions of which are bent at right angles, is a porcelain receptacle or socket 18 of the usual construction fastened to the strips 16 and 17 by screws 19. An ordinary incandescent lamp 20 is inserted in the said socket 18. A collar 21 extends from the said reflector 14 to the said socket 18, so that the lamp 20 is completely enclosed by the reflector 14 and the collar 21 and thus no light from the lamp 20 can pass into the upper portion of the apparatus.

The second and larger aperture 13 is provided with a downwardly extending flange 22. A lamp reflector 23 is so disposed within the aperture 13 that its lower extremity extends a certain distance downward beyond the plate 10. The reflector 23 is supported by small lugs 24 which are fastened to the plate 10 by means of small screws 25. Disposed within the reflector 23 is an incandescent lamp 26, which is preferably of the gas filled type and of considerably greater candle power than the incandescent lamp 20. The lamp 26 is held in a porcelain receptacle 27 of the usual construction, the said receptacle or socket being supported from the reflector 23 by means of strips 28 and fastened to the latter by means of screws 29. From one of the strips 28 there is also supported a baffle 30 of polished metal, by means of a strip 31. The baffle is bent in the shape of a curve.

From below the said aperture 13 is cov-

ered by a door 32 which is hinged on lugs 33, provided on the lower side of the plate 10, and a pin 34, and adapted to be fastened by means of a thumb screw 35 hinged on two lugs 36, on the lower side of the plate 10. The door 32 is composed of a cylindrical upper portion 37 having an offset 38, and a lower turned-in portion 39, the latter being adapted to support a circular convexly curved disc of glass 40 of such a color, that it will correct the light given by the incandescent lamp 26 and thus render the same equivalent to daylight. To guard against undue cooling of the glass disc 40 by the metal of the door 32, there is provided around its lower edge an asbestos cord 41, around its outer edge an asbestos ring 41', and around its upper edge a ring 42 of sheet asbestos. Supported and held by screws 43 on the said offset 38 there is a cylindrical ring 44 of sheet metal, which is arranged in such a way that when the said door 32 is closed, the said cylindrical ring 44 will project a certain distance upward beyond the lower edge of the reflector 23.

The said lamp structure and plate supporting the same is arranged and enclosed within a sheet metal enclosure or casing 45, which consists of a lower substantially cylindrical portion 46, an outwardly curved portion 47, and inwardly curved portion 48 of substantially conical shape, a bowl-shaped portion 49 and a top portion 50, the latter being provided with a plurality of slots 51.

The casing 45 is supported by the plate 10, it being fastened thereto by means of screws 46'. Arranged within the upper portion of the apparatus there is a spider 52, supporting a baffle plate 53 and secured in the top of the structure by screws 53'. The spider 52 is provided with a central rod 54 threaded on each end, which rod holds together the bowl-shaped portion 49 and the top portion 50 by means of the threaded knob 50'. The portion 48 of the casing is provided with a small opening 55, closed by a glass disc 55', for the purpose of indicating to the person operating the apparatus that the lamp giving light equivalent to daylight is lighted.

A suitable scheme for making the electrical connections in my apparatus is shown in the wiring diagram Fig. 3. Through the hollow base 2 there pass insulated studs 56 and 57, for the purpose of making connection with a source of electricity. Within the hollow base 2 there is also disposed a single-pole switch 58 of the usual construction and a three-point contact two-circuit switch 59, also of the usual construction. The single-pole switch 58 serves for cutting the apparatus in and out of circuit. From the insulated stud 56 connection is made with one point of the single-pole switch 58,

while the other point of the same is connected with the common pole of the three-point switch 59. From the other two points of the switch 59 two wires 60 and 61 pass through the hollow upright 5 and along recesses provided in the arms 6 and 7 to the incandescent lamps 20 and 26, the wires 60 and 61 being connected to the positive lead of each lamp. A wire 62 also passing through the hollow upright 5, serves as the common return from both lamps to the insulated post 57.

It is thus seen that when the single pole switch 58 is closed, the lamps 20 and 26 can be alternately actuated by means of the three point switch 59.

It can be seen from the above description that the light of the ordinary artificial light source 20 and that of the lamp 26 giving light equivalent to daylight cannot mix with each other and thus vitiate the results, because the light from the ordinary incandescent lamp 20 cannot penetrate into the housing 45 and escape through the color screen 40 on account of said lamp 20 being entirely enclosed above. Furthermore, ample ventilation of the apparatus is assured, because air enters the same through the space left between the part 37 of the door 32 and the flange 22 of the plate 10, which air partly passes upwardly into the casing 45 and partly downwardly through the space left between the cylindrical ring 44 and the reflector 23 of the high candle power lamp 26 into the reflector 23 and around the lamp 26, thus carrying off a certain amount of the heat generated by the same. The polished inner surface of the baffle 30 reflects the radiant heat from the reflector 23 and lamp 26 and distributes the same in such a manner that the casing 45 is heated uniformly to a comparatively low maximum temperature, instead of being heated unduly at a few places. The heated air is deflected and distributed by the baffle plate 53 and then passes out through the slots 51 provided in the top portion of the casing.

By the means above described I am enabled to conform with the rules laid down by the National Board of Fire Underwriters, which prescribe that the temperature of any exposed portion of a lamp equipment enclosing a gas filled incandescent lamp shall not exceed a temperature of 200° F. (93° C.) when the same is to be used in a location where inflammable material is liable to come in contact with the same. Notwithstanding however, the large amount of air space around the lamp 26 thus secured, the light of the same is effectively prevented from escaping around the colored glass disc 40, because of the ring 44 which overlaps the reflector 23, and from the top of the casing because of the baffle plate 53.

It is understood, that I do not limit my-

self to the precise construction and arrangement of parts shown in the accompanying drawing, as it is evident that various modifications and changes of form may be made therein without departing from the spirit of my invention,

Having thus described my invention, I claim:

1. In an apparatus of the character described, the combination with a plurality of light sources of different quality of an enclosure for the same, portable means supporting the said enclosure, electrical connections adapted to alternately actuate the said light sources, and disposed within the said enclosure supporting means for the said light sources, light reflecting means for the same, ventilating and heat distributing means and means for preventing light of one quality from mixing with light of another quality.

2. In an apparatus of the character described, the combination with two light sources of different light quality of an enclosure for the same, the said enclosure containing supporting means for the said light sources, light reflecting means for the same, heat distributing and ventilating means and means screening the light of one source from that of the other, hollow portable means supporting the said enclosure, electrical connections passing therethrough, and switching means located therein adapted to alternately actuate the said light sources and cut the same in and out of circuit.

3. In an apparatus of the character described, the combination with an artificial light source and a light source corrected to give light equivalent to daylight, of an enclosure for the same, the said enclosure being provided with supporting means for the said light source, light reflecting means for the same, heat-distributing and ventilating means and means for screening the light of one source from that of the other, hollow portable means supporting the said enclosure, electrical connections passing therethrough and switching means located therein and adapted to alternately actuate the said light sources and to cut the same in and out of circuit.

4. In an apparatus of the character described, the combination with an artificial light source and a light source corrected to

give light equivalent to daylight, of an enclosure for the same, the said enclosure being provided with supporting means for the said light sources, light reflecting means for the same, heat-distributing and ventilating means and means for screening the light of one source from that of the other, hollow portable means supporting the said enclosure, electrical connections passing therethrough and switching means located therein adapted to alternately actuate the said light sources and to cut the same in and out of circuit and means to visually indicate when one or the other of the light sources is on.

5. An apparatus of the character described comprising an enclosure having disposed therein a source of ordinary artificial light, a light source giving light equivalent to daylight, means supporting the said light sources, light reflecting means for the same, means for ventilating the said enclosure, means for evenly distributing the heat therein, and means for screening one light source from the other, hollow portable means supporting the said enclosure and electrical connecting and switching means disposed therein, adapted to alternately actuate the said light sources and cut the same in and out of circuit.

6. An apparatus of the character described comprising an enclosure having disposed therein a source of ordinary artificial light, a light source giving light equivalent to daylight, means supporting the said light sources, light reflecting means for the same, means for ventilating the said enclosure, means for evenly distributing the heat therein, and means for screening one light source from the other, hollow portable means supporting the said enclosure and electrical connecting and switching means disposed therein, adapted to alternately actuate the said light sources and cut the same in and out of circuit and means to visually indicate when one or the other of the light sources is on.

Signed at New York, in the county of New York and State of New York, this 16th day of September A. D. 1919.

NORMAN MACBETH.

Witnesses:

HAROLD B. WHITE,

RUDOLPH SCHUMACHER, Jr.