(No Model.)

J. H. IRWIN.

INCANDESCENT ELECTRICAL ILLUMINATION.

No. 261,351. Patented July 18, 1882.

Fig. 1.

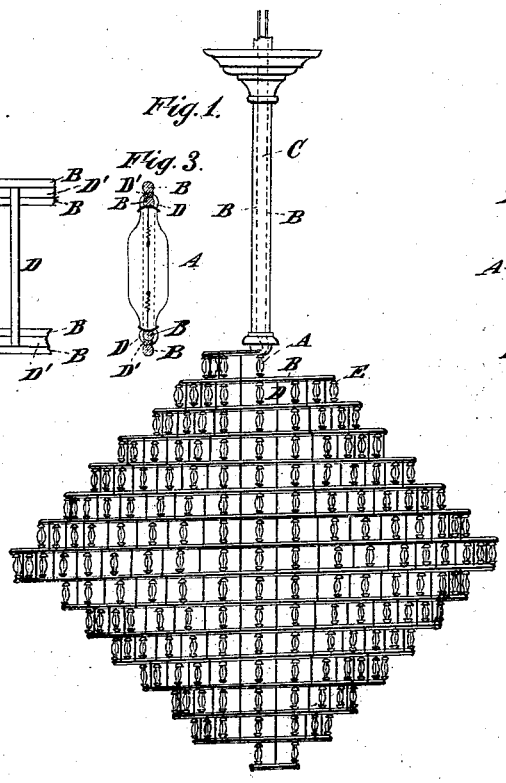


Fig. 2.

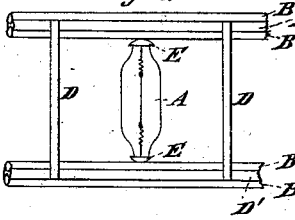


Fig. 3.

Fig. 4.

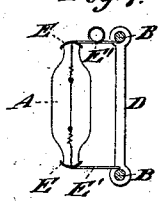
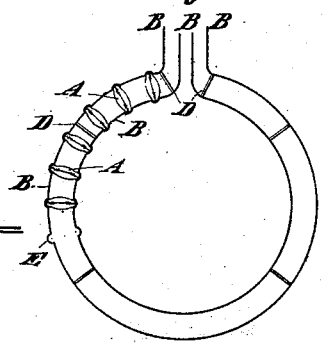


Fig. 5.



Witnesses—
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UNITED STATES PATENT OFFICE.

JOHN H. IRWIN, OF MORTON, PENNSYLVANIA.

INCANDESCENT ELECTRICAL ILLUMINATION.

SPECIFICATION forming part of Letters Patent No. 261,351; dated July 18, 1882.

Application filed December 28, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. IRWIN, of Morton, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Incandescent Electrical Illumination, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings and the letters of reference marked thereon.

My invention relates especially to the application of small or minute incandescent electric lamps to the formation of objects either in outline or skeleton, and may aptly be termed "the art of forming symbols or figures from electrically-illuminated vacuous cells," and has for its object the production of new and useful devices which may be employed for illuminating and decorating apartments, buildings, &c.; and it consists essentially in employing small incandescent electric lamps or vacuous cells partaking in appearance of the character of beads, these luminous beads being placed in such positions as when the inclosed filament of carbon is incandescent to form certain symbols, figures, &c.; and my invention involves certain novel and useful combinations or arrangements of parts and peculiarities of construction and operation, all of which will be hereinafter first fully described, and then pointed out in the claims.

In the drawings, Figure 1 is an elevation of a skeleton chandelier formed in accordance with my invention. Fig. 2 is an enlarged view of one of the lamps employed by me and an illustration of one method of affixing the lamps in place, and Fig. 3 is a sectional view of the conductors supporting the lamp. Fig. 4 shows one mode employed by me for supporting the lamps and forming the electrical connection. Fig. 5 is a plan view of a circle composing an electric circuit, showing the method employed for arranging the lamps therein.

Like letters of reference, wherever they occur, indicate corresponding parts in all the figures.

The lamps A employed for forming the various devices are vacuous cells or bulbs made small, the filament of carbon inclosed therein being proportionately delicate and diminutive, one of such lamps having about one-fourth to one-sixteenth the illuminating power of the ordinary incandescent electric lamp. By distributing the light over a large illuminated surface it is, as a whole, softened and diffused, whereby the resultant effect is made extremely pleasing, and disagreeable dazzling of the eye by concentrated incandescence is obviated. The bulb or cell of the lamps A may be formed of white or colored glass, and by employing various colors a great diversity of appearance may be given the illuminated device.

In forming the device shown in Fig. 1 the conducting-wires B, leading from the electric generator, may be carried down a central support, C, either upon the interior or exterior thereof, as desired, and may be arranged in a double spiral, as shown. In this construction it will be seen that the double spiral gradually enlarges from the extremity of support C, and then contracting to a point below; but of course the arrangement and construction may be varied according to the desire and skill of the artisan forming the device. At suitable points between the spirals are located short pieces of non-conducting material, D, holding the conductors firmly in place and rendering connection with the lamps easy of accomplishment. The spiral wires are insulated from each other by means of the non-conducting material D′ placed therebetween. Each of the vacuous cells A contains a filament of carbon, having conductors to each extremity of the cell. Said conductors may extend sufficiently beyond the lamp to permit the formation of electrical connection with the line by twisting; or they may be bent down against the outside of the bulb. In the latter case the conducting-wires may be provided with indentations or depressions E therein; or caps or grasping devices may be affixed thereto opposite to each other and at suitable distances apart. The indentations, caps, or grasping devices correspond in shape to the extremities of the lamps, and by slightly pressing the conductors apart, the same being constructed elastic for this purpose, each lamp may be placed securely in position and held in such a manner as to complete the required electrical connection. By this means lamps may be easily changed or removed without materially affecting those remaining in circuit.

In the device shown in Fig. 1 the lamps are arranged in multiple arc; but it is obvious that any method of connecting up may be em-

ployed; but the advantages are plainly in favor of the method of arrangement indicated.

The number of outlines, figures, symbols, &c., which may be formed is practically unlimited, those given being amply sufficient to illustrate the object of my invention.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. Illuminated signals, symbols, designs, or figures composed of electrical conductors bent or formed into the required shapes and having numerous electrical vacuous cells removably attached or connected thereto, substantially as described.

2. The conductors of an electric circuit formed of suitable material, running parallel to each other, said conductors having cavities or depressions therein or grasping devices affixed thereto, located substantially opposite to each other, as set forth, and adapted and arranged to hold incandescent electric lamps or vacuous cells forming electric connection with said lamps, substantially as shown and described.

3. The combination, with electric conductors running parallel to each other and having suitable devices thereon for grasping the lamps, of the vacuous cells or incandescent electric lamps so constructed as to fit into said grasping devices and form electric connection with the line, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

JOHN H. IRWIN.

Witnesses:
F. W. HANAFORD,
A. M. PIERCE.