No. 739,845. PATENTED SEPT. 29. 1903.

S. EVANS.

ILLUMINATED SIGN.

APPLICATION FILED APR. 27, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

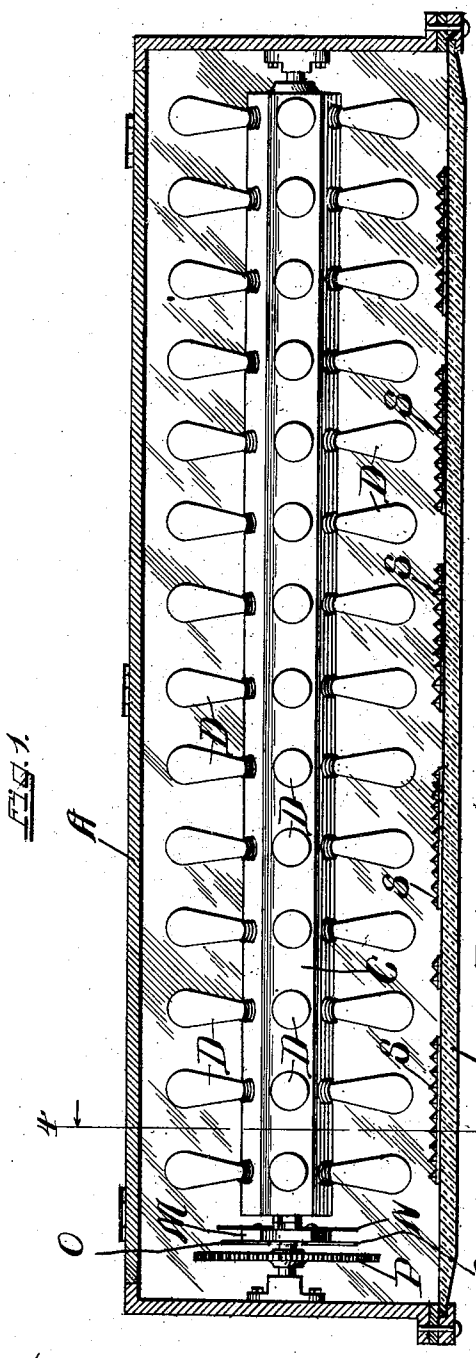


Fig. 1.

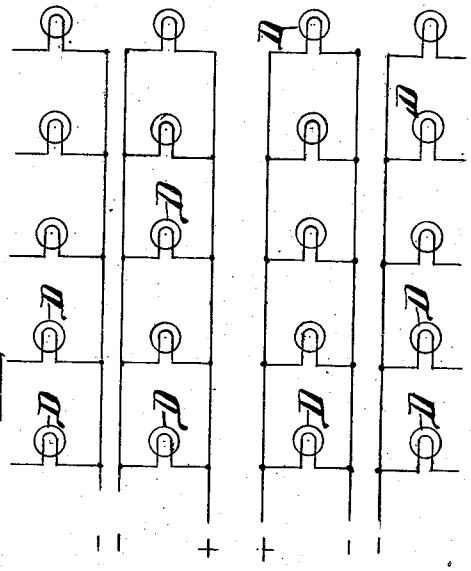


Fig. 3.

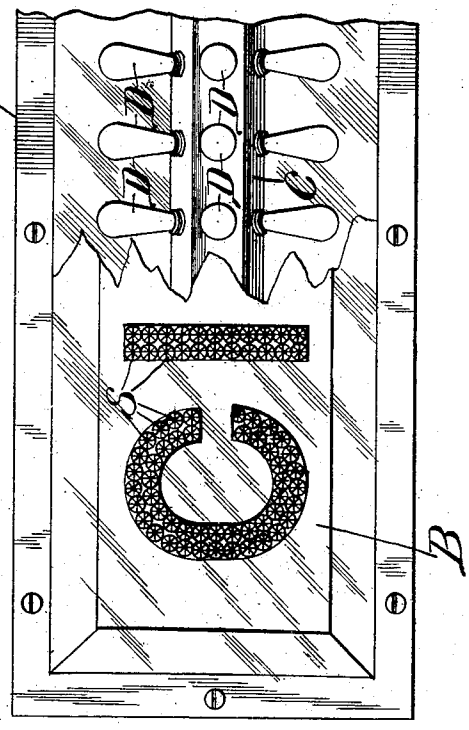


Fig. 2.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4.

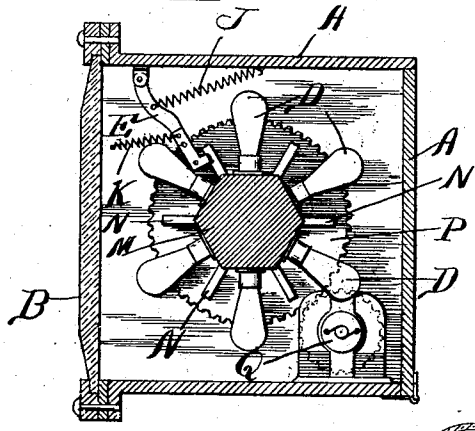


Fig. 8.

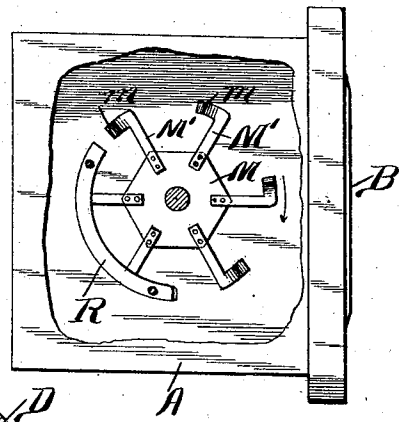


Fig. 11.

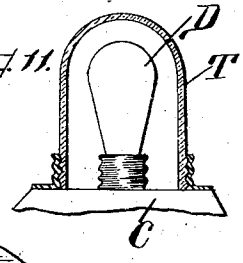


Fig. 9.

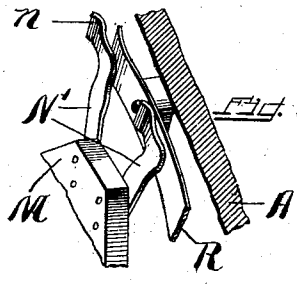


Fig. 5.

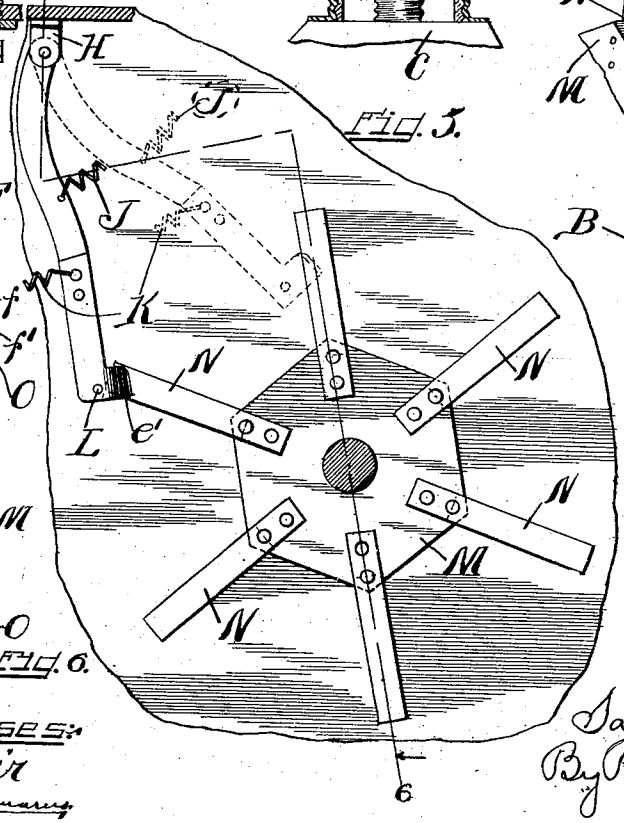


Fig. 10.

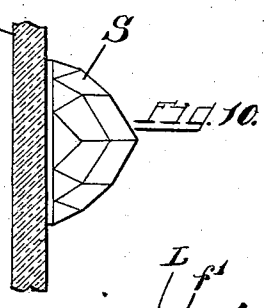
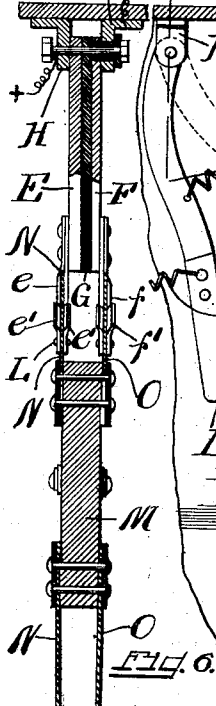


Fig. 7.
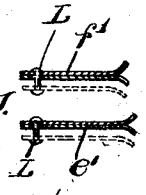


Fig. 6.



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No. 739,845. Patented September 29, 1903.

UNITED STATES PATENT OFFICE.

SAMUEL EVANS, OF OAKPARK, ILLINOIS.

ILLUMINATED SIGN.

SPECIFICATION forming part of Letters Patent No. 739,845, dated September 29, 1903.

Application filed April 27, 1903. Serial No. 154,539. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL EVANS, a citizen of the United States, residing at Oakpark, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Illuminated Signs, of which the following is a specification.

My invention relates to improvements in illuminated signs, and particularly to improvements in such signs as those shown and described in Letters Patent No. 653,003, granted to me July 3, 1900.

The object of my invention is to produce a conspicuous and attractive sign by means of moving electric lights, especially in connection with jeweled signs, such as shown in my prior patent.

By combining a jeweled sign with moving lights arranged behind the sign the principal points of ornamentation are constantly shifted from various facets, with the result that the aggregate of these shifting points of illumination on each jewel produces a particularly attractive and sparkling effect which can be attained in no other way, and by means of the structure hereinafter described I am enabled to obtain this sparkling effect by means of electric lights mounted upon a rotating spindle. This arrangement also permits of unique and attractive effects by the use of different-colored lights arranged on the rotating spindle, either in rows, spirals, or otherwise, so that an illuminated sign may be produced in which the jewels will give off a scintillating light combined with constant changing of colors and combinations of colors, producing a great variety of tints.

By means of one feature of my invention I am also enabled to save a large part of the expense attendant upon the use of colored electric lamps, while at the same time providing a ready means for obtaining the desired color effect.

These and such other features as may hereinafter appear are attained by the devices shown in the accompanying drawings, in which—

Figure 1 is a plan view of the inside of a sign embodying my improved invention. Fig. 2 is a detail showing a portion of a sign with a part of the front thereof broken away. Fig. 3 is a diagrammatic view showing the wireing of the lamps. Fig. 4 is a sectional view on the line 4 4 of Fig. 1 looking in the direction indicated by the arrows. Fig. 5 is an enlarged detail showing my devices for making and breaking contact. Fig. 6 is a sectional detail on the line 6 6 of Fig. 5 looking in the direction indicated by the arrows. Fig. 7 is a sectional detail of the contact-yoke. Fig. 8 is an end view of a modified form of contact. Fig. 9 is a detail in perspective of Fig. 8. Fig. 10 is a detail of one of the jewels, showing its mounting on the sign; and Fig. 11 is a detail of my improved color-hood.

Like letters of reference indicate the same parts in the several figures and drawings.

Referring by letter to the accompanying drawings, A is the casing, having a transparent front B, upon which the sign proper is mounted and containing a longitudinally-arranged shaft or spindle C, upon which in the illustrations, the electric lights D are mounted in longitudinal rows. The said lights are wired in parallel, as shown in Fig. 3, the positive wires being arranged adjacent to each other and the negative wires adjacent to each other, as shown, so that all danger of short-circuiting is avoided.

In my preferred construction the positive and negative contacts with the line-wires are all made at one end of the spindle C, although obviously the device which is used for making and breaking contact may be so arranged that the current shall enter at one end of the spindle and pass out at the opposite end. For the purpose of making and breaking contact in such a manner as to avoid forming an arc and so as to successively illuminate each row of lights I provide a pair of spring-actuated contact-arms E F, which are insulated from each other by an insulating-strip G, but are secured together to form what I call a "contact-yoke." The arms E F are pivotally mounted upon a bracket formed of lugs H and I, which are insulated from each other, but are in electrical contact with the arms E and F, respectively.

The lug H is connected with the positive line-wire and the lug I with the negative line-wire. The position of the contact-yoke is primarily controlled by a spring J, which is suitably mounted within the casing, and the contact-yoke is also preferably provided with a retarding-spring K. Mounted upon the lower

ends of the arms E F are spring contacts or clips *e f*, respectively, each comprising two metallic spring-strips mounted side by side, as shown, and preferably provided with diverging flanges *e'* and *f'*, respectively. These spring-strips are secured together adjacent to their lower ends by a pin or rivet L, which is rigidly secured to one of said strips and extends loosely through the other of said strips, thereby serving as a stop to limit the play of said strips apart from each other and also serving an additional purpose which will be later explained.

Mounted upon the shaft of the spindle C and adjacent to the end of the spindle C is a block M, preferably of slate or other insulating material, and mounted upon opposite faces of this block and extending radially from the axis of the shaft are contact-arms N O, arranged in pairs, the arms N, for instance, being negative and the arms O positive. These arms N O are arranged so as to make contact with the spring-clips *e f*, respectively, by entering between the opposite faces of the spring-strips forming said clips. As the rotation of the spindle C and its shaft brings the arms N O into electrical contact with the clips *e f* the passage of the arms N O between the strips forming the clips *e f* is stopped by the pins L, and therefore as the rotation of the spindle continues the further travel of the arms N O carries the pivotally-mounted arms E F and their respective spring-clips backwardly against the tension of the spring J. As the arms N O move on one center and the arms E F swing on another center the arms N O soon reach a point where they disengage the pins L, whereupon the contraction of the spring J snaps the arms E F forward sharply. Meanwhile the next pair of arms N O has advanced to a position in the path of the forward swing of the arms E F, with the result that as the arms E F are snapped forward by the contact of the spring J the clips *e f* are snapped into contact with the next pair of arms N O, so that the action of the spring J is such as to sharply break contact between the clips *e f* and one pair of arms N O as soon as they disengage the pin L and to almost simultaneously snap the clips *e f* into contact with the next pair of arms N O.

The spring K is provided merely as a brake or retarding spring to control the forward snap of the arms E F. Mounted upon the shaft of the spindle C is also a gear-wheel P, which is arranged to mesh with a smaller gear-wheel upon the motor Q. Of course it will be understood that the lamp-wires are connected in any suitable manner with the arms N O, so that the course of the current will be in through the lug H, the arm E, the spring-clip *e*, arm N, thence through the lamps and back through the arm O, clip *f*, arm F, and lug I, and out to the line.

In Figs. 8 and 9 I have shown modifications in which the block M is provided with contact-arms M', which are provided with spring-lugs *m*, arranged to make sliding contact with the contact-strip R, which is suitably connected with the incoming wire from the line, this arrangement being exactly duplicated at the opposite end of the spindle C to make contact with a like contact-strip which is suitably connected with the outgoing wire to the line.

Fig. 10 illustrates a detail of my preferred mounting of the jewels of the sign, B being the glass front of the sign, upon the inside of which is mounted the jewel S. As the spindle C rotates behind the jewels the advancing lights will strike most strongly first upon certain facets of the jewel, and then as the light continues to move the point of strongest illumination will correspondingly shift until the light goes out or passes out of the range of the jewel.

It will be apparent that with my arrangement as the spindle rotates one row of lights after another will be successively lighted and will in turn be disconnected from the current, thus producing a constant scintillation or sparkling effect back and forth across the face of the jewels, while at the same time saving in current, as each row of lights need only be lighted while immediately adjacent to the jeweled sign.

In producing color effects it is customary to use colored electric-light globes; but commercially-colored globes made of colored glass are too expensive when the limited life of each lamp is considered, and there is also a difficulty in obtaining the exact shades and tints desired. Consequently it is customary to stain the globes superficially with the desired color; but even such coloring is an item of very considerable expense, considering the frequency with which the lamps have to be renewed. To avoid this expense, I provide colored hoods, as shown in detail in Fig. 11, which are arranged to be removably secured over each of the lamps of plain white glass, so that with the initial expense of one set of colored hoods any desired color effects may be obtained and changed at will and continued indefinitely, it only being necessary to replace the lamps as they are burned out by new lamps of plain glass.

Broadly considered, my invention, which has been illustrated and explained in detail in the drawings and in the foregoing specification, but which is not limited to such details, comprises, first, a sign illuminated by moving lights, especially a jeweled sign; second, the means, substantially as shown, for utilizing an electric current to successively light up successive rows of lights, and, third, the combination of the electric globes with separable colored hoods.

I claim—

1. The combination with a transparent sign, of a rotatable support mounted back of said sign, a plurality of illuminating means mounted in rows on said support, means for rotat-

ing said support, and means for successively lighting alternate rows of said illuminating means.

2. The combination with a transparent sign, of a rotatable spindle mounted behind said sign, a plurality of electric lights mounted upon said spindle, means for rotating said spindle, and means for successively lighting alternate groups of said lights.

3. The combination with a transparent jeweled sign, of illuminating means mounted behind said jewels, and means for moving said illuminating means.

4. The combination with a transparent jeweled sign, of a plurality of lights mounted back of said jewels and arranged to illuminate said jewels, and means for moving said lights, all so arranged that a sparkling effect will be produced.

5. In a device of the class described, the combination with a rotating spindle, of a plurality of electrical circuits, electric lamps mounted on said spindle and interposed in said circuits and mounted to rotate in unison with said spindle, and contacts connected with the line-wires and arranged to make and break electrical connection with said first-named contacts as said spindle revolves.

6. In a device of the class described, comprising a rotating spindle, a plurality of electrical circuits, and lamps mounted on said spindle and interposed in said circuits, of contact-arms arranged at the terminals of said circuits, and pivotally-mounted contact-arms connected with the line-wires and provided with spring-clips and strips and arranged in the path of said first-named contact-arms, so as to make and break contact therewith as said contact-arms rotate in unison with said spindle, and a spring arranged to snap said clips out of contact with one pair of said first-named contact-arms, as the same in their rotation disengage said strips, and to snap said clips into contact with the next advancing pair of contact-arms, substantially as described.

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Witnesses:
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G. Y. DANKWARD.