

(No Model.)

A. SPEER.

ILLUMINATED CLOCK HAND AND DIAL.

No. 347,528.

Patented Aug. 17, 1886.

Fig. 1.

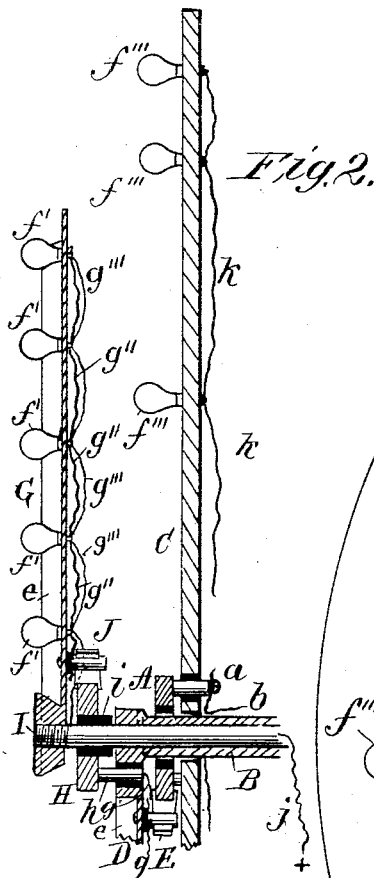
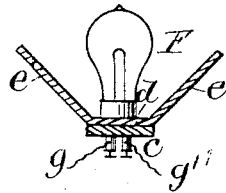
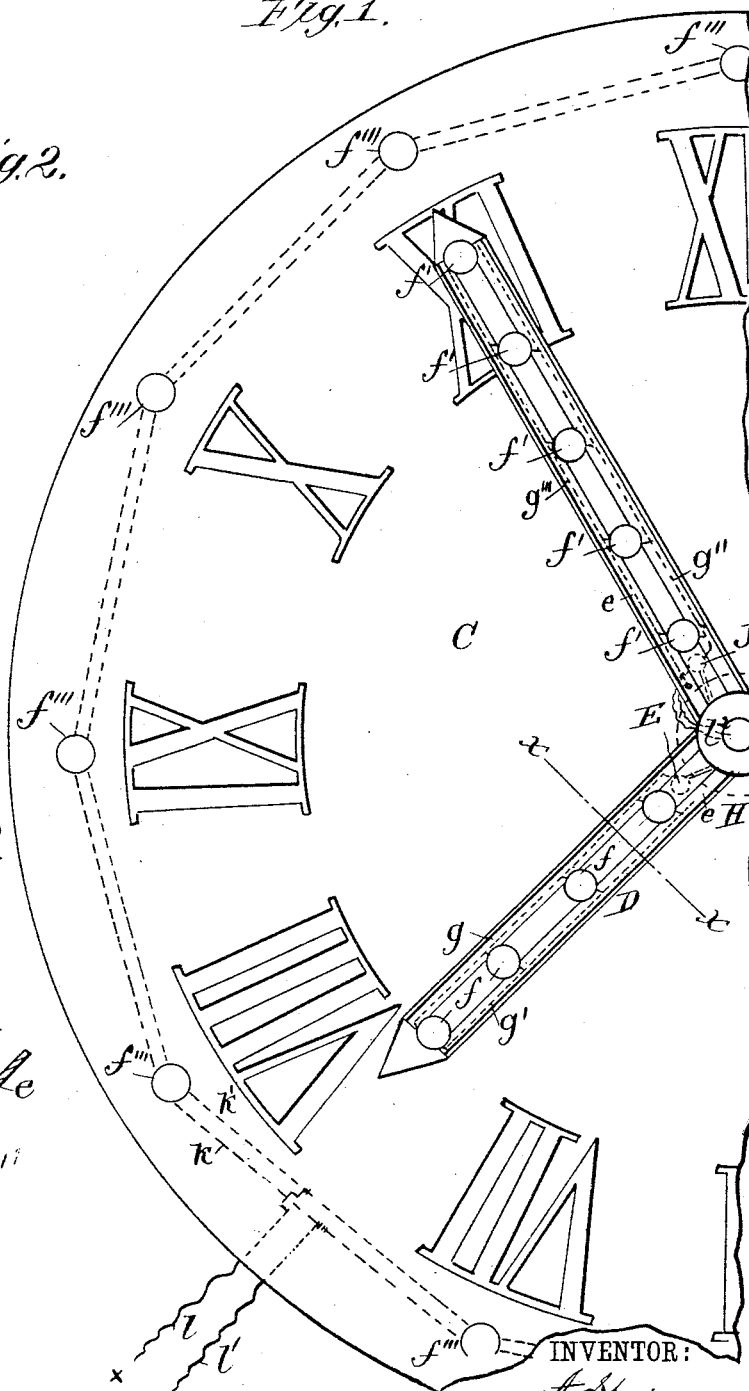


Fig. 3.



WITNESSES:

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ALFRED SPEER, OF PASSAIC, NEW JERSEY.

ILLUMINATED CLOCK HAND AND DIAL.

SPECIFICATION forming part of Letters Patent No. 347,528, dated August 17, 1886.

Application filed March 18, 1886. Serial No. 195,772. (No model.)

To all whom it may concern:

Be it known that I, ALFRED SPEER, of Passaic, in the county of Passaic and State of New Jersey, have invented a new and useful Improvement in Illuminated Clock Hands and Dials, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a front elevation of a portion of an illuminated clock, showing the illuminated hands. Fig. 2 is a section taken longitudinally through the minute and hour hand and diametrically through the dial. Fig. 3 is a transverse section of one of the hands, taken on line $\alpha\alpha$ in Fig. 1.

Similar letters of reference indicate corresponding parts in the different figures of the drawings.

The common method of illuminating transparent or translucent clock-dials, by placing behind them one or more lights, is effective only for comparatively short distances, owing to the effects of irradiation, which render the hands and figures indistinct, if not invisible.

The object of my invention is to provide means for illuminating the hands and dial of a clock, so that the position of the hand may be accurately located at a long distance from the clock, and the hour-divisions of the dial will also be distinctly indicated.

My invention consists in combining, with each of the hands of a clock, a series of lights or lamps, preferably incandescent electric lamps, so as to be carried by the hands; also in the combination, with the hands and lamps, of reflectors arranged to throw the light outward from the hands, and to render all the light of the lamp available.

My invention also consists in the combination, with the dial, of an incandescent electric lamp placed at each of the principal divisions of the clock-dial, outside of the figures, to indicate the hour and five-minute divisions of the dial.

The metallic ring A is supported concentric with the hour-hand sleeve B from the dial C by means of studs a , and the ring A is connected, by means of the wire b , with a suitable electric generator. To the hour-hand D, secured to the sleeve B, is attached a metallic brush, E, which bears upon the ring A with sufficient pressure to take the current from the ring. The hand D

is preferably made of a bar, c , to which is secured a metallic reflector, F, having the surface d , parallel with the plane of rotation of the hand, and the flaring sides e , projecting obliquely beyond the edges of the hand.

As the construction of the minute-hand G is the same as that of the hour-hand D, one description will answer for both.

The hand D is provided with sockets for receiving the incandescent electric lamps f , which are connected in multiple arc with the wires g g' . The wire g communicates electrically with the brush E, and the wire g' communicates with an insulated pin, h , carried by the hand D and connected electrically with a metal ring, H, carried by the minute-hand arbor I, but insulated therefrom by the insulating-sleeve i . The minute-hand carries a brush, J, which bears upon the periphery of the ring H, making an electrical contact therewith, and the brush J is connected by the wire g'' with one side of each lamp f' , carried by the minute-hand, the opposite side of each lamp being connected by a wire, g''' , with the minute-hand arbor I, either directly or through the metallic portion of the minute-hand received on the minute-hand arbor. The minute-hand arbor I is connected in any suitable way with the conductor j , which leads to the electric generator. It will thus be seen that a current passing to the ring A, through the conductor b , is conveyed to the lamps of the hour-hand through the brush E and the wires g g' , thence to the ring H from the wire g' , through the stud h , thence through the brush J and conductor g'' , through the lamps, thence back to the generator through the wires g''' , the minute-hand arbor I, and conductor j .

Although I have shown the lamps carried by the hands connected up in multiple arc, I do not limit or confine myself to this arrangement; neither do I limit myself to the particular way of conducting the current to and from the hands, as the lamps may be connected in series, and the current may be conveyed to them in any other well-known way.

The lamps, together with the reflector carried by each hand, give the hand the appearance of being a continuous bar of light; but I may dispense with the reflector and employ a large number of small lamps placed nearer together, to render the bar of light continuous. As a

means of distinguishing one hand from the other, I may employ lamps with differently-colored bulbs on the different hands.

The dial C, used in connection with my improvement, need not necessarily be transparent or translucent. To locate the position of the figures of the dial in the night, an incandescent electric lamp, f''' , is placed at each hour-division of the dial, and the lamps are connected in multiple arc by the conductors $k'k'$, (shown in dotted lines in Fig. 1,) and the current is conveyed to the conductors $k'k'$ by the conductors $l'l'$ from any suitable electric generator.

To assist in determining the relative position of the hour and minute hands, I place at the axis of rotation of the hands a distinctive light, l' , which may be a lamp of greater brilliancy than those carried by the hands, or it may have a bulb of different color from the lamps on the hands or dial.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the hands of a clock provided with series of electric lamps, of reflectors placed between the lamps and the hands, and a lamp arranged at the axis of the hands and having a different color from the lamp carried by the hands, substantially as and for the purpose specified.

2. The combination, with the dial C, and hands D G, arranged to move in front of the dial, of a series of electric lamps, $f'f'$, carried by the hands, and means for completing the circuit to the lamps, consisting of the stationary ring A, brush E, the conductors $g'g'$, the ring H, brush J, and conductors $g''g''$, substantially as herein shown and described.

ALFRED SPEER.

Witnesses:

GEO. M. HOPKINS,
C. SEDGWICK.