(No Model.) 2 Sheets—Sheet 1.

D. J. CARTWRIGHT.

ARC LIGHT HANGER BOARD.

No. 530,882. Patented Dec. 11, 1894.

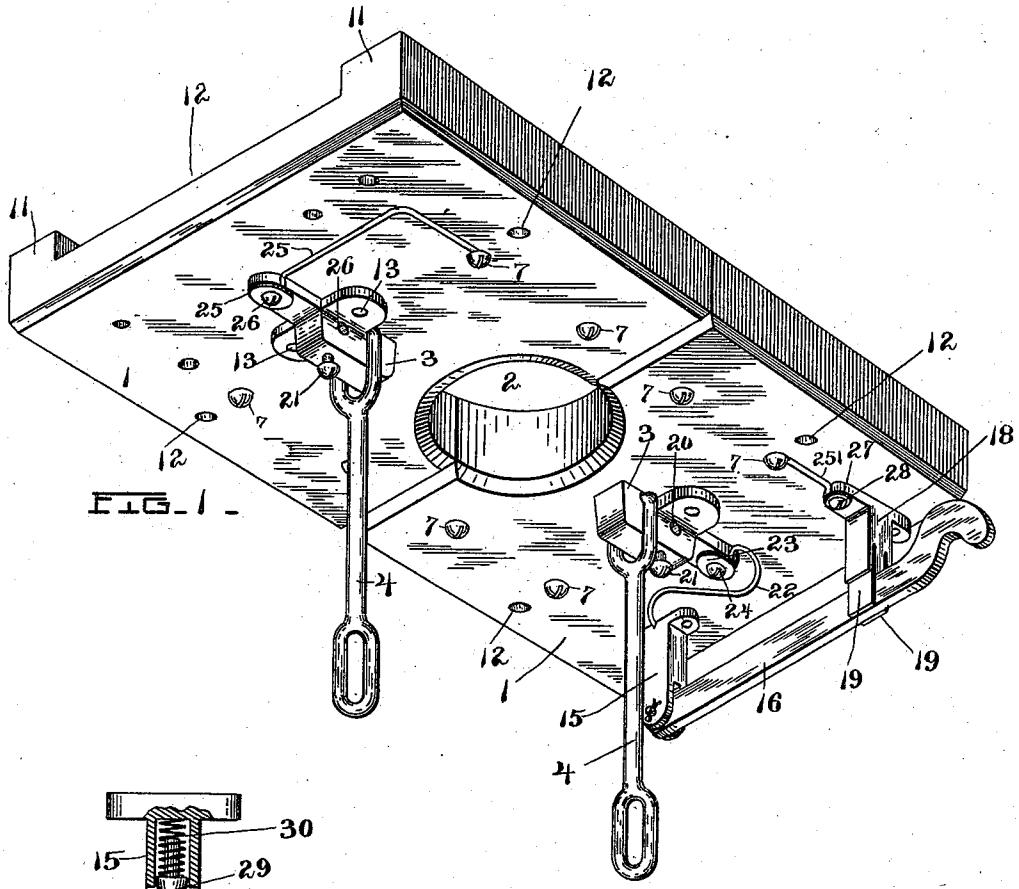

FIG. 1.

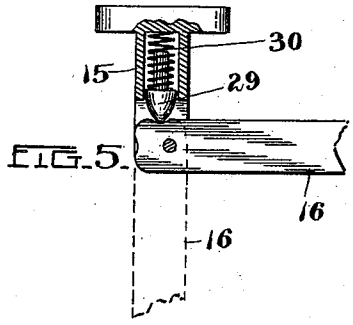

FIG. 5.

Witnesses.
Arthur F. Randall.
Harry M. Keyes.

Inventor.
David J. Cartwright
by Macleod Calvert Randall
his Attorneys.

(No Model.) 2 Sheets—Sheet 2.

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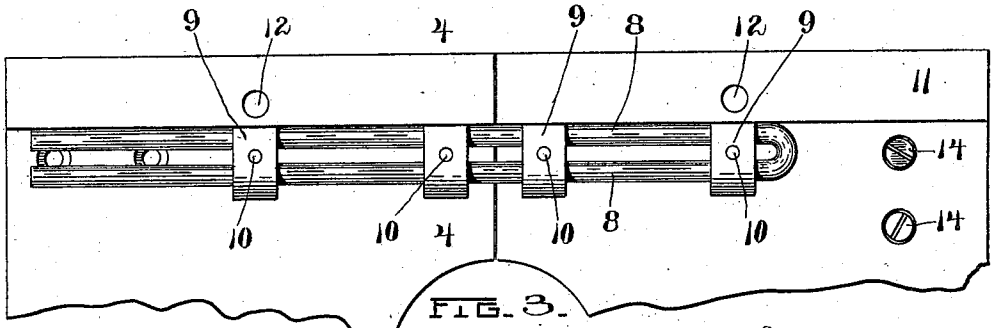

FIG. 3.

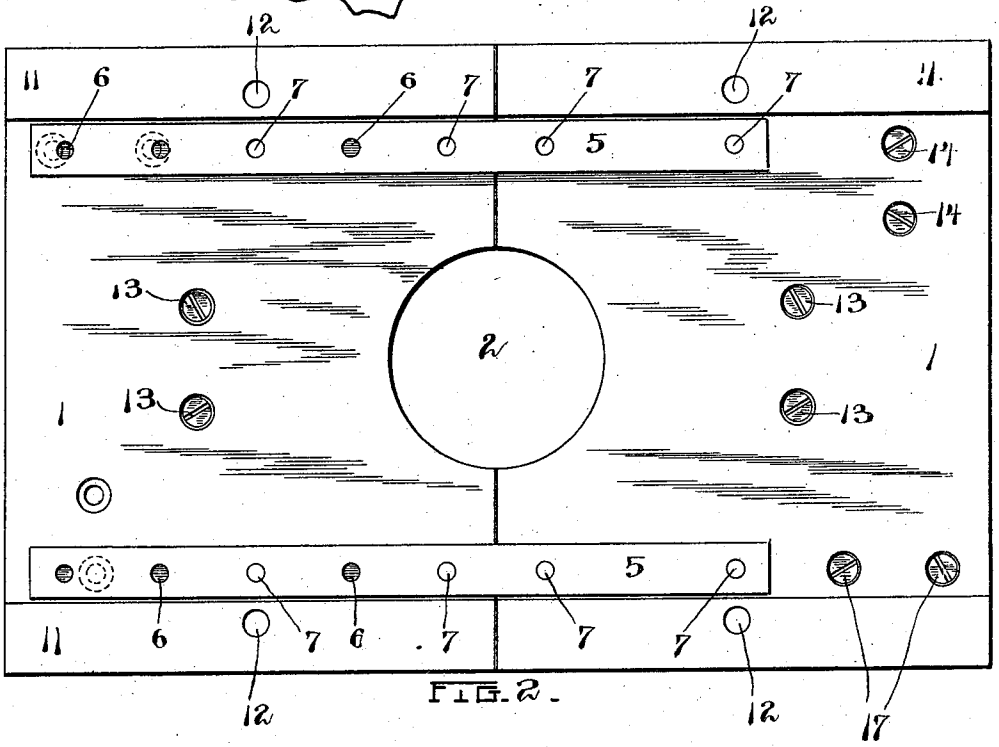

FIG. 2.

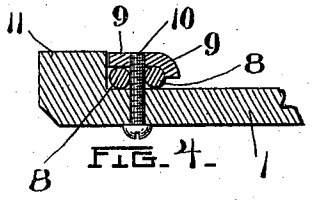

FIG. 4.

Witnesses.

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UNITED STATES PATENT OFFICE.

DAVID J. CARTWRIGHT, OF BOSTON, MASSACHUSETTS.

ARC-LIGHT HANGER-BOARD.

SPECIFICATION forming part of Letters Patent No. 530,882, dated December 11, 1894.

Application filed January 26, 1894. Serial No. 498,102. (No model.)

To all whom it may concern:

Be it known that I, DAVID J. CARTWRIGHT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Arc-Light Hanger-Boards, of which the following is a specification, reference being had therein to the accompanying drawings.

In the accompanying drawings, Figure 1 is a view in perspective of an arc-light hanger-board having my invention applied thereto. Fig. 2 is a view in plan showing the upper side of the said hanger-board. Fig. 3 is a view in plan of part of a hanger-board having applied thereto a modification of my invention. Fig. 4 is a view in cross-section on line 4—4 in Fig. 3. Fig. 5 is a sectional view showing certain details of construction.

The hanger-board shown in the drawings is formed in halves or sections 1, 1, and the hole 2 through which the upper part or chimney of the lamp projects when the hanger-board is applied to practical use is formed partly in one and partly in the other of the proximate or meeting-ends of the said halves or sections, each of the said meeting-ends having made therein the semi-circular recess which is clearly shown in the drawings. To the under side of each of the halves or sections 1, 1 is applied the hanger 3 having, on the side thereof which is toward the hole 2, an arm provided, in the surface thereof that rests against the surface of the corresponding half or section 1, with a transverse groove or notch to receive the cross-bar of the eye or loop that is formed in the upper end of the corresponding link or rod 4, so as thereby to suspend the said link or rod, the latter having a similar loop or eye at the lower end thereof, as shown in Fig. 1, and as usual in practice, to provide for the connection of the lamp therewith. The said hanger and links or rods may be of any desired and suitable or known character and construction. The halves or sections 1, 1, are connected together by devices of a character which permit them to be seperated more or less when desired, thereby rendering the hanger-board variable or adjustable in length and enabling the hangers 3, 3 thereof to be set or adjusted at the distance apart from each other which may be necessary in order to suit the particular lamp that it is wished to apply thereto. This capacity for variation for adjustment of the length of the hanger-board enables the same to be used for the suspension of lamps in which the devices that engage with the rods or links 4, 4 are at various distances apart.

The preferred means of connecting the halves or sections 1, 1, together with capacity for adjustment as aforesaid consists of the two strips 5, 5, of suitable material, see Fig. 2, these strips having formed therein holes 6, 6 for the passage of the stems of the screws 7, 7, by means of which they are clamped to the respective halves or sections. Usually in practice each strip is engaged by four screws 7, 7, two of which also engage with one of the halves or sections while the other two thereof also engage with the other of such halves or sections. Each strip has formed therein also a number of additional holes as represented in Fig. 2, so as to enable the halves or sections to be set at any desired distance apart within the range or limits of the adjustability provided for. In practice, the holes are so set as to make the steps of the adjustment about one inch each. Usually in the embodiment of the invention which is represented in the drawings, the approximate ends of the halves or sections 1, 1, may be separated from each other either one or two inches as desired.

In Figs. 3 and 4 a construction is shown in which the adjustability is not limited to steps of one or more inches each, but wherein the parts may be adjusted to any extent greater or less than an inch, within the range or limit of the adjustability. In this construction there are employed a single rod or wire bent into U-shape as shown with its two parts 8, 8, parallel and close together, or two parallel rods or wires, clips 9, 9, lying upon the parts 8, 8, and screws 10, 10 passing through the halves or sections 1, 1, between the parts 8, 8, and engaging with the clips 9, 9. See particularly Fig. 4. In this construction, by loosening the screws 10, 10 the parts 8, 8 may be slid lengthwise under the clips 9, 9 in a manner to adjust the halves or sections relatively to each other as desired.

By having the halves or sections movable or adjustable relatively to each other, they

may be relatively shifted as much as may be necessary in order to find a firm and solid backing in the ceiling or other support for the reception of the securing screws of each of such halves or sections. This obviates the necessity which has existed heretofore for shifting the entire board until a firm backing is found for all its securing screws.

Hanger-boards heretofore usually have been made of wood, and fires have frequently resulted from the ignition thereof as a result of sparking, and from making a ground connection in consequence of the pressure of moisture, and other causes, as defective switches. By preference, I form the hanger-board of porcelain or other incombustible and waterproof material, and thereby obviate all liability whatever to fire.

In order to provide for effectively ventilating between the hanger board and the support to which it is attached, I form ledges 11, 11, at each side-edge of the halves or sections, as shown, thereby producing a depression or space 12 between the said ledges through which air is free to circulate after the hanger-board has been affixed to its support. This guards against the condensation and deposition of moisture at the back of the hanger-board, and the short circuiting which in some cases results therefrom.

The securing devices which have been described above with reference to Figs. 2, 3 and 4, preferably are applied to the upper side or back of the hanger-board in positions closely adjacent to the ledges 11, 11. In the case of the modification which is shown in Figs. 3 and 4, each clip 9 is straight at the end thereof next the adjacent ledge 11 and the said end abuts the proximate vertical side of the ledge. The said vertical side prevents the escape laterally of the corresponding part or rod 8 from under the said straight edge of the clip. The other end of the clip however is curved downwardly as shown in Fig. 4, to insure the retention of the other part or rod 8. The holes 12, 12 through which are intended to be passed the screws or bolts by which the hanger-board is secured to its support are formed at the edges thereof and through the ledges 11, 11. The holes for the screws which secure to the hanger-board the various devices which are applied to the latter are formed in the portions of the hanger board which extend from side to side between the said ledges. The screws which serve for the attachment of the devices that are applied to the under side or face of a hanger-board preferably are introduced from the back of the hanger-board, so as that all will be accessible from the said back. See Fig. 2. The screws 7 and 9, however, which secure the strips 5 and rods or parts 8 to the back of the hanger-board are introduced from the face of the latter. As a matter of convenience, the two halves or sections 1, 1, are formed exactly alike and from the same mold or pattern, so that they are reversible, and either of them may be applied in the place of the other as clearly indicated. This saves making halves or sections of two different patterns. The screws 13, 13 of each half or section serve for the attachment of the corresponding hanger 3 thereto. The screws 14, 14 serve for the attachment to one of the halves or sections 1 of the hanger 15 to which is pivoted the switch-lever 16. The screws 17, 17 serve for the attachment to the latter half or section of the hanger 18 which is provided with the converging springs 19, 19 that contact with the said switch lever 16. The feed-wires (not shown) pass through the holes 20, 20, that are formed through the hangers 3, 3, and are engaged by binding screws 21, 21, whose points enter the said holes 20, 20.

At 22 is a wire having one end thereof clamped between the upper end of the hanger 15 and the proximate surface of the half or section of the hanger-board to which the hanger 15 is secured, and the other end thereof clamped to an arm of the adjacent hanger 3, by a washer 23, and a binding-screw 24.

At 25 is a wire having one end thereof held to an arm of the hanger 3 on the other section or half 1 by means of a washer 25 and binding screw 26, and the other end thereof applied to an adjacent screw 7.

At 25′ is a wire having one end thereof held to an arm of the hanger 18 of the first half or section 1 by means of a washer 27 and binding-screw 28, and the other end thereof applied to an adjacent screw 7. Communication thus is established between the left-hand hanger 3 and the hanger 18 by means of the wires 25, 25′, the screws 7, 7, to which their ends are applied, and the strip 5 which is engaged by the said screws, and in making adjustment of the halves or sections 1, 1, no change in the wires 25 25′, is required.

The switch-lever 16 shown in Fig. 1 differs from the usual switch lever employed on hanger-boards in that whereas the latter merely is slipped transversely or horizontally onto or off from a suitable contact, in order to make or break the circuit between the respective hangers 3, 3, the said switch-lever 16 moves vertically or at right angles to the surface of the hanger-board and enters between the free ends of two converging spring blades or plates 19, 19 which latter clasp its sides closely and insure perfect contact notwithstanding the presence of dust or other foreign substance on the parts.

The usual form of switch not only is liable to work imperfectly by failing to establish proper electrical communication, but it is inconvenient and difficult to shift the same from one to the other position thereof after the hanger board has been applied in the location in which it is used. Arranging the switch lever 16 as shown in the drawings, so as to work up and down vertically renders it more convenient to shift the same. I render it easier still to work the said switch lever by combining therewith a plunger 29

which is acted upon by a spring 30, the said plunger and spring being contained within the hanger 15, which latter is made hollow as indicated in Fig. 5, the head of the said plunger bearing upon the rounded head of the switch lever. When the switch is closed the said head of the plunger acts upon the said heel slightly to the rear of the pivot of the switch lever so as to tend to hold the switch lever in the closed position. When the switch-lever is thrown into the open position indicated by dotted lines in Fig. 5, the head of the plunger by entering the depression in the end of the switch lever serves to retain it in the said dotted line position. In addition, the action of the plunger upon the heel of the switch lever serves to complete the movement of the switch lever in each direction as will be obvious, so that it is necessary in operating the said switch to move it only until the rounded apex of the heel has been carried past the head of the plunger, when the action of the latter will assist and complete the movement of the switch-lever in the desired direction.

The switch-lever shown in the drawings and just described is particularly well adapted to be reached from below, to shift it from one to the other of its positions, after the hanger-board has been secured in the desired location, thereby rendering it unnecessary to ascend a ladder or the like in order to reach the same.

I claim as my invention—

1. An arc-light hanger-board constructed in sections having hangers for the suspension of an electric lamp respectively attached thereto, and provided with means for securing the said sections at different distances apart, substantially as described.

2. An arc-light hanger-board constructed in sections having hangers for the suspension of an electric lamp respectively attached thereto, rods or strips for uniting the said sections with each other, and means for adjustably securing the said rods or strips to the said sections, substantially as described.

3. The combination with an arc-light hanger-board provided with hangers, and converging contact springs in electrical connection with one of said hangers, of a switch-lever in electrical connection with the other of said hangers and arranged to swing vertically with relation to the said hanger-board, and the spring-actuated plunger, co-acting with the heel of the said switch-lever to complete the movement thereof in either direction and retain it in either of the positions which it is caused to assume, the switch-lever being provided with a heel having an apex which passes from side to side of the said plunger substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID J. CARTWRIGHT.

Witnesses:
MILAN F. STEVENS,
CHAS. F. RANDALL.